

The Canadian Medical Association Journal



Contents

	PAGE		PAGE
ORIGINAL ARTICLES		EDITORIAL	
Pancreatic cysts: By W. F. Hamilton, M.D.	385	The invalided soldiers' commission and the new department of soldiers' reestablishment	429
Cholecystectomy—a useful technique. By F. N. G. Starr, M.B.	391	Editorial Notes	435
Note on the handling and after-history of heart affections in soldiers. By J. C. Meakins, Major, C.A.M.C.	394	THE ASSOCIATION	
The diagnosis of disseminated sclerosis. By Arthur G. Morphy, B.A., M.D.	401	The Hamilton Meeting: Preliminary programme	441
Tuberculin, its nature and action. By Robert C. Paterson, M.D.	409	Railway rates	453
The cutaneous manifestations of syphilis. By A. V. Greaves, M.B., Captain, C.A.M.C.	417	Hotels	452
The teaching of hygiene. By A. H. Mackay, LL.D.	424	OBITUARY	
CASE REPORTS		Dr. Peter Conroy	454
Ruptured ectopic—blood transfusion and pulmonary embolism. By R. V. B. Shier, M.D.	427	Dr. A. E. Hanna	455
		Dr. Alexander Fraser	455
		Dr. Oswald M. Jones	455
		MISCELLANY	
		News, Provincial	458
		News, Army Medical Service	463
		Canadian Literature	466
		Book Reviews	467
		Books Received	471
		MEDICAL SOCIETIES	
		Montreal Medico-Chirurgical Society	473

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No. 5

PANCREATIC CYSTS

BY W. F. HAMILTON, M.D.

Montreal

WHILE this subject is of interest more from the standpoint of the pathologist, the physiologist and the operating surgeon, than from that of the therapist, I am prompted to discuss it to-day from the point of view of diagnosis, which must be admitted is of first interest to all.

During the last ten years, three cases have been admitted to my service. These with another, permission to report which has been kindly granted by Dr. Keenan, form the substance of this brief paper.

Case 1. A female, aged sixty-one, was admitted in May, 1913. She complained of attacks of pain in the right side of the abdomen, through to the back and to the right shoulder. She had suffered from "one thing or another" for many years, but her first attack of abdominal pain was experienced four years before her admission. She had needed morphine occasionally for relief, and was at one time jaundiced. A few months before admission her attack had been specially severe, jaundice again appeared, and clay coloured stools were noted. When she was admitted, the examination showed that she had lost some weight, her normal weight being one hundred and ten, her present weight ninety-six. The chief interest centred about the examination of the abdomen. Here one found a thin lax abdominal wall, with irregular undulations just below the umbilicus. A little to the left of the middle line and above the umbilicus was a mass, tender, slightly moveable, with respiration, and on palpation, the note over which was that of dull tympany. The liver and the spleen were not palpable. There was no sign of fluid. The other systems were negative. On

subjecting this patient to an *x-ray* examination with the aid of a barium meal, the stomach was found displaced to the left and downwards, its transverse measurement shortened with the greater curvature lengthened and presenting a very sharply defined outline. It was clear that this mass was not in the stomach. The diagnosis with the help of the *x-ray* examination was that of an extra-gastric tumour, most likely a cyst of the pancreas. The patient was operated on by Dr. Armstrong, a median incision being made above the umbilicus. A cyst was discovered which occupied the body and head of the pancreas, the stomach lying to the left side and somewhat in front of the mass. Six ounces of greenish brown fluid of soapy consistency was aspirated, a tube inserted into the cyst cavity, and the abdomen closed. The gall bladder and passages were free, and there was no evidence of duodenal cancer. The cyst fluid contained pancreatic ferments and bile. The patient made an uneventful recovery and was discharged June 17th, 1913. A specimen of tissue from the operation was examined in the pathological department, where but little could be made out as to its origin. The diagnosis of "degenerated tissue" was returned. In this case there is the history of recurring attacks of abdominal pain, slight emaciation, vomiting, jaundice, clay-coloured stools (no history of injury). The presence of a round tumour displacing the stomach to the left was the main physical feature in the case.

Case 2. (Med. Case No. 22142). Male, aged forty-four, was admitted to the hospital January 21st, 1915, with a history of but two months' duration. His complaint was of short, sharp pains in the left side of the upper abdomen first noticed while ploughing. He continued his work until about two and a half weeks before admission, when by reason of the increasingly severe pain he was unable to go on longer. At this time also his abdomen was evidently larger than normal. He lost weight and colour. His past history was free from any suggestion or indication of a cause for abdominal pain, no injury, no stomach disturbance, no diarrhoea. He had never been jaundiced. The abdomen was distended asymetrically, the left side being more prominent than the right. The fulness was largely in the left upper quadrant where a mass, soft, somewhat irregular, and slightly pulsating could be seen and felt. It was movable with respiration, the percussion note over the mass was impaired. By the aid of the *x-ray* and barium meal, the stomach was found displaced and lying across the abdomen. While the stomach emptied normally

yet it appeared from the very varying amount of barium at different places, as if its wall were irregular, "hitched up" and formed into pockets. In this case the mass was below the stomach and above the transverse colon. The patient was operated on by Dr. Garrow, an incision being made through the left rectus. A cyst bounded in front by the gastro-colic omentum and below by the transverse meso colon, externally the gastro-splenic omentum and layers of ascending colon, was discovered, presenting a hæmorrhagic appearance. A large quantity of chocolate-brown fluid more or less hæmorrhagic in character, was evacuated, the sac packed with gauze and a drain inserted. The fluid was examined and found to be alkaline in reaction and to contain trypsin, lipase and amylase, with free blood pigment. The patient remained in the hospital for several days, and was discharged considerably improved.

The abdominal wall healed up. In the course of a few weeks, however, the cyst refilled, the wall gave way, the patient died through inanition.

In review we may state that the case was of short duration, the development of a tumour rapidly ensued after the onset of pain, there was no history of injury or of jaundice or vomiting. Emaciation was not pronounced until near the end, and no evidence of malignant disease was discovered.

Case 3. (Med. Case No. 25244). A male, aged sixty-seven, was admitted on February 17th, 1917. He stated that he had been well until the middle of January of this year, although he had felt slight pain in the abdomen about the umbilicus from time to time following the first of the month. After a half day's heavy work on January 15th, and a hearty meal, the patient suffered intense pain early the following morning. No further symptoms marked the case beyond feeling that his abdomen was not quite right on passing his hand over the upper quadrant where a fulness was discovered. Another attack of pain succeeded in about three weeks, the lump at this time, as he described it, being somewhat larger. He had slight discomfort after eating. He had never been jaundiced and while his stools were occasionally pale, nothing more had been remarked concerning them. This patient aged sixty-seven looked about forty-seven years old. There was little or no emaciation; save for slight traces of albumin in the urine, the systems were normal, with the exception of the digestive tract. Immediately beneath left costal margin, a smooth mass was discovered on inspection,

well above the umbilicus. It had a firm feel, giving the sensation of tension rather than solidity. It moved slightly with inspiration. The percussion note over it was faintly tympanitic. It came out from under the left costal margin, and presented a well-defined, rounded edge, an inch and a half below the ensiform cartilage in the middle line. It was at first thought that we were dealing with an extensive cancer of the stomach, but on going more thoroughly into the case aided by the barium meal and x-ray, it was evident we were dealing with a mass outside this organ. The stomach was plainly displaced to the left, its greater curvature greatly elongated, its central measurement markedly shortened as shown in the figure. The stomach was above, to the left, and below the tumour. A very marked filling defect which seemed permanent was noticed in the lesser curvature. The patient was operated on on February 17th, by an incision through the left rectus, revealing a large cystic mass pushing up the gastro-hepatic omentum. The cyst was opened and twenty-six ounces of dirty brownish black fluid removed. Scattered over the cyst's wall were a number of very hard shotty masses suggesting malignancy. Drainage tube was inserted in the cyst and the abdominal wall closed. At the end of three weeks the patient was discharged with the drainage tube still in. By an unfortunate oversight the fluid was not examined. The chief points to be noted in this case, are the severe attacks of abdominal pain, remote (forty-three years ago) injury to the abdomen, the absence of jaundice and vomiting, and the comparatively short course before a well-defined tumour was present.

When last heard from June 13th, there was still a fistulous opening, yet the general condition was good, the patient eating well and going about.

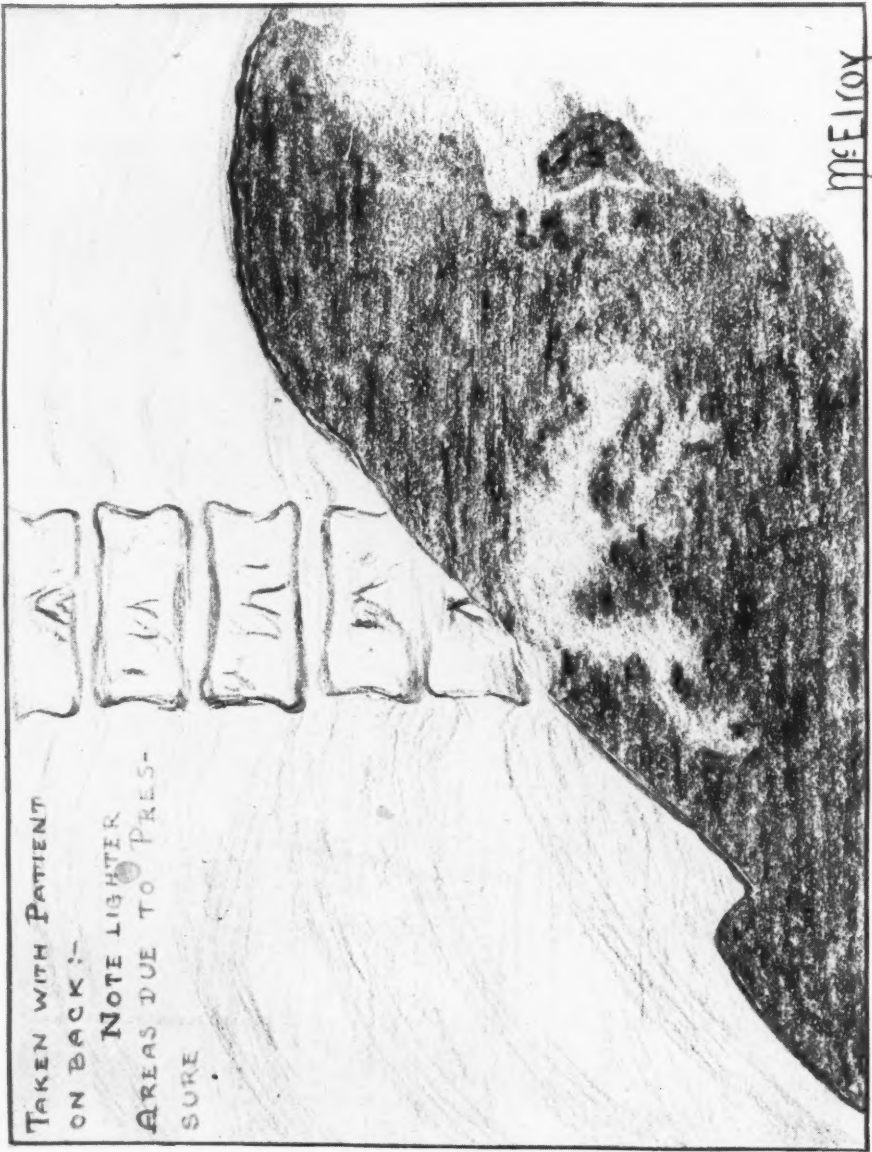
Case 4. (Surgical case report 20343). A female, forty years of age, had complained of pain for four years in the left upper quadrant. Two and a half years before admission, signs of increased abdominal tension were noted. There was little to remark here beyond the physical examination of the abdomen, which was full, rounded, presenting a left sided prominence. There was a large hard mass occupying the whole of the left upper quadrant, passing to the mammary line on the right side and down below the umbilicus to the distance of two inches in the middle line. The left upper portion of the mass was hidden by the costal margin. The mass was smooth, freely movable from side to side, distinct from the liver dulness, and though the difference between the

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CASE No. 1

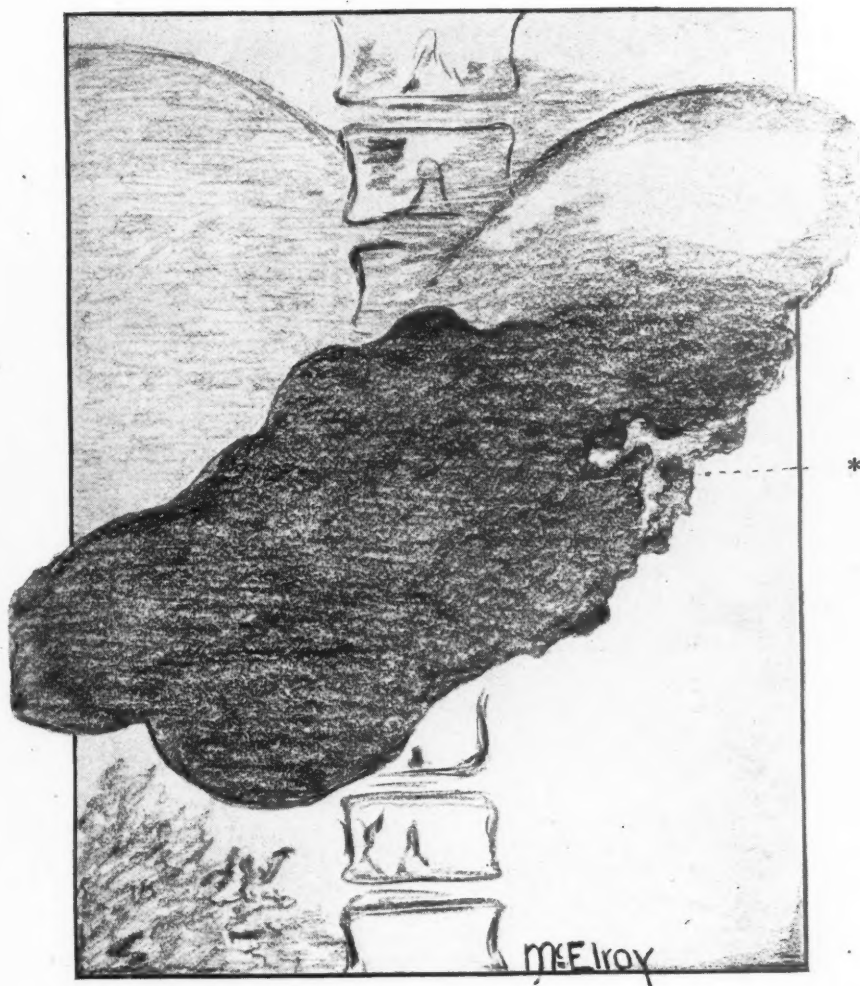


CASE No. 2



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CASE No. 2

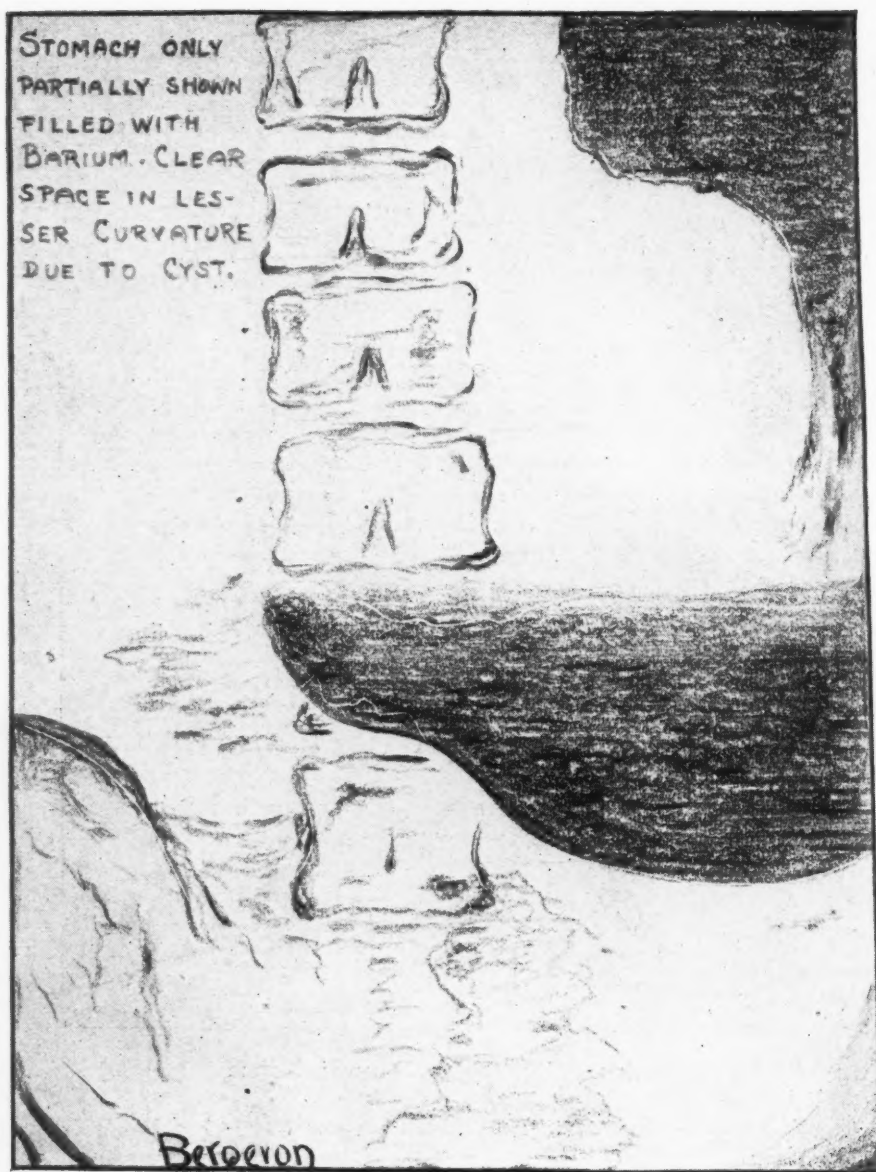


Stomach partially filled with barium

*Irregular area of shadow due to pressure of tumour (cyst)

THE CANADIAN MEDICAL

CASE No. 3



splenic dulness and that of the mass could not be made out, no notches were found anteriorly. Patient was operated on, on December 5th, 1916, without previous x-ray examination. Incision was made in the middle line above the umbilicus, the mass was exposed with the stomach lying above it and the transverse colon below. Eighty ounces of fluid of yellowish brown colour, was aspirated, the cyst wall containing a few small cysts filled with opalescent gelatinous material. The cyst was found to extend down to the pancreas, and too close to large vessels for removal, so the wall was sutured to the abdominal wall and a drainage tube inserted. The patient was discharged in May, and readmitted again in September on account of refilling of the cyst. The operation on this occasion revealed a condition practically the same as that previously described. It was noted at this time, however, that the pancreas was practically wholly involved in the cystic process. After several weeks during which the patient showed a very febrile temperature she was discharged, and since has been lost sight of. A diagnosis of retention cyst of the pancreas was made.

In this case the history was protracted, the cyst large and involvement of the pancreas very extensive. In the course of the treatment patient showed considerable emaciation, the weight being reduced from one hundred and forty-seven to one hundred and twenty. There was no history of jaundice or of vomiting, or of the characteristic stools or urine indicating pancreatic disease. The diagnosis was made from the physical signs entirely. In this case the stomach lay above the mass.

A diagnosis of cyst or tumour of the pancreas cannot be made from the symptoms. Indeed many physical signs referable to disturbance of pancreatic functions are usually wanting. Pale, bulky stools, sugar in the urine, emaciation, and, as French points out, jaundice from time to time.

The common symptom in this small group of cases was pain—described as short, sharp, and recurrent, intense, requiring morphine in considerable dosage.

Pain, as Opie points out, is of little diagnostic value. Jaundice was found in but one of the cases. This was not present when the diagnosis was made. The history of the cases alone affording the evidence. In one case only, nutritional changes were marked. The patient (Case 4) lost twenty pounds in the year previous to operation.

The stools and urine in none of these cases gave any suggestion

of pancreatic disease up to the time of operation, although no examination was made for ferments.

The character of fluid from these cysts at the time of the operation is described as "greenish brown soapy," "yellowish brown" with opalescent gelatinous material, "chocolate brown", "dirty brownish". In the two cases examined, pancreatic ferments were found in the fluid. By an unfortunate oversight, the contents of the cysts in the other cases were not examined.

Regarding enzymes in the contents of the cyst, Opie may be cited as saying that "it is often possible to demonstrate one or more of the three well-known enzymes of pancreatic juice in the contents of the pancreatic cyst, but proteolytic, lipolytic and diastatic enzymes have been found in the fluid removed from abdominal cysts which have not had their origin in the pancreas." Our experience bears out the truth of G. Newton Pitt's statement that physical are more important than rational signs in establishing the diagnosis of a cyst of the pancreas.

The position in relation to other organs, and the "feel" of the tumour as made out in palpation, are most important. It is well to remember, however, that the mass is frequently moveable both upon pressure and with respiration. Contrary to the teaching found in a few of our text-books, the mobility of a pancreatic cyst may be considerable. Admitting that the mobility of a cyst of the pancreas cannot compare with that of a mesenteric cyst, yet one cannot agree that "in rare cases it may be feebly" *moveable* in consequence of its attachment to the tail of the pancreas by a narrow pedicle.

One object in bringing forward this subject to-day is that of laying emphasis on the great advantage in diagnosis resulting from a careful x-ray examination by the aid of the barium meal. The sketches, presented herewith, illustrate the relation of the tumour to the stomach.

CHOLECYSTECTOMY—A USEFUL TECHNIQUE

By F. N. G. STARR, M.B.

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AND

ROSCOE GRAHAM, M.B.

Assistant in Clinical Surgery, University of Toronto

WHILE one of us is the son of the parsonage, yet he has never been a strong believer in the eleventh hour conversion; at the same time he realizes that such is better than no conversion at all. The process by which we have wandered from a strong predilection for cholecystostomy to a decided preference for cholecystectomy has been gradual and we think is based upon a sure foundation. We shall have more to say of this in the spring when we have had a chance to tabulate some results and to conclude some animal experiments now being undertaken.

Some surgeons claim that the gall-bladder should be removed only when there is a definite pathological lesion, such as hydrops, calcareous or fibrous degeneration, chronic empyema, strawberry gall-bladder, carcinoma, extensive laceration, or perforation. We, however, frequently see a gall-bladder which on inspection looks normal and on palpation feels normal and empties readily, and yet if removed, we find in the submucosa an infection with a beginning fibrosis. For example, recently one of us removed the gall-bladder in a child of one and a half years, suffering from glycosuria. It seemed a sin to do it, and yet upon culture we obtained a staphylococcus aureus, and found fibrosis microscopically.

One of the most potent factors in our conversion was a series of cases that fell into our hands, in whom drainage had been done by other surgeons, or by one of us. Some of these at the second operation had stones, that had either been overlooked, or had reformed from the persistence of the old infection, even after drainage; but all had the most infernal adhesions, necessitating a

*Read at Section of Surgery, Academy of Medicine, Toronto, November 20th, 1917.
Received for publication March 5th, 1918.

very difficult and dangerous dissection to reach the source of trouble and remove the gall-bladder. Then two cases from whom stones had been removed and drainage established came under observation, with a recurrence of symptoms, only in an exaggerated form. In these two a diagnosis of cancer was made and verified at operation. Had cholecystectomy been done at the first operation, the cancer would probably have been cured without the knowledge of its presence.

We find a definite diminution in the morbidity in cholecystectomy, and no increase in the mortality. When this statement is made, it should be clearly understood that, to attain such results, the operation must be done by a surgeon and *not* by a "commission" merchant.

One requires an incision that will give easy access to the gall-bladder as well as the opportunity of exploring the ducts. With this object in view, we begin below and to the right of the ensiform cartilage, and parallel the costal margin, until opposite the outer border of the right rectus, and then direct the incision vertically downward. Two cross scratches are made with the back of the knife at the prominent point in each curve. The rectus sheath is reached and opened from one end of the incision to the other. The fibres of the rectus are then separated, when the posterior rectus sheath together with the peritoneum is opened. Any adhesions are divided, and the field is then carefully packed off with gauze strips soaked in saline. The gall-bladder and the ducts to the ampulla are then carefully explored. The peritoneum about the neck of the gall-bladder is nicked with a sharp knife, and is stripped down along the cystic duct by means of a small gauze "push" in a pair of forceps. The cystic duct and cystic artery are then clamped across with a pair of Kocher pointed forceps with a slight curve, another pair is clamped across the duct just above, and with a sharp knife the duct and artery are divided between the forceps. A small curved round needle, armed with a piece of No. 2 iodine catgut is then passed around the artery and tied beyond the point of the forceps. This same suture is continued through the peritoneum and through the duct, keeping close to the forceps. These are then slipped out from the loops, and the suture drawn tight and again tied. Continuing with this suture, the redundant peritoneum is then picked up and puckered over the stump of the duct. One then makes tension on the forceps at the neck of the gall-bladder, and by means of a few touches with the knife, the gall-bladder is stripped from its bed. As it is detached, our suture, which was

left long, gradually follows up, catching the serous margins on each side of the gall-bladder fissure, so that when the fundus of the gall-bladder is detached from the liver margin, another stitch completes the closure of the fissure.

This suturing and ligaturing has all been done with the one double strand of catgut. The wound is then dry and usually may be closed without drainage. If for some particular reason we decide to drain, we use a split drainage tube, with the end cut into four tails and containing a piece of gauze in the lumen, which is carried down over the stump of the cystic duct, two tails going on each side of the common duct, and the wound closed. We usually remove the tube on the second or third day, if there has been no leakage of bile. As a rule there is none. The wound usually heals by first intention, and the patient is on her way home in two weeks, sometimes less.

If operating in the presence of many adhesions, when one is closing the gall-bladder fissure a small piece of omentum may be laid into the fissure so that, when the duodenum again comes in contact, there is little chance of adhesion. If some other surgeon requires to open that belly for some future trouble, he will find we have left him a clear field to work upon.

1. MILES PORTER—*Annals of Surgery*, September, 1917.

A DANISH doctor in a French hospital has invented cardboard legs for amputated limbs. The urgent need of cheaper and lighter material, on account of the great number of men who are being brought back from the trenches, evolved the novel idea. Two sheets of cardboard about the thickness of three-sixteenths of an inch are employed with bandages soaked in a starch solution. Careful measurements are taken and the cardboard is cut into what resembles two peg tops, which, after being soaked in the bath, fold round each other and are secured with bandages. The principle is that of an egg in a cup, and the patient can wear the leg long before the wound is healed.

NOTE ON THE HANDLING AND AFTER HISTORY OF HEART AFFECTIONS IN SOLDIERS*

By J. C. MEAKINS

Major, C.A.M.C.

THE army has, unfortunately, in their classification of heart affections in soldiers adopted the terms V.D.H. and D.A.H. Under the former are usually classed all cases with cardiac murmurs and under the latter those cases having no cardiac murmurs but certain symptoms which are supposed to result from what is commonly called "cardiac insufficiency". I say unfortunately, because neither of these symbols mean what they indicate. A small percentage *only* of the cases having cardiac murmurs have valvular disease and even a smaller percentage of the cases of D.A.H. have a "disordered action of the heart". It is quite a common occurrence for a soldier to be diagnosed V.D.H. when there is merely a systolic murmur heard over some part of the cardiac area which, standing by itself, indicates nothing. Furthermore, many such cases were in good condition when this murmur was accidentally discovered. The diagnosis of V.D.H. has made a profound impression on the soldier's mind. For the first time he realizes he has a heart and very likely he will never forget it: in spite of considerable argument to the contrary.

So it is with the case of D.A.H.: comparatively few of them have any real disorder that can be attributed directly to the heart. The vast majority of these cases have a regular pulse, although maybe a little faster than normal. In these patients none of the graver signs of heart affection can be detected but there is complaint of breathlessness, palpitation, giddiness or actual fainting, easy exhaustion, and præcordial pain in varying degree: symptoms arising for the most part upon exertion or exaggerated by it.

It has been our object in the past year at the Hampstead

Read at the forty-eighth annual meeting of the Canadian Medical Association, Montreal, June 15th, 1917.

*The text of this paper is based on the work done by the Medical Staff of the Hampstead Military Hospital under the direction of the Medical Research Committee.

Military Hospital to try to determine the value to the army of men suffering from the above symptoms, and to attempt to sort them into various categories of fitness or unfitness for duty.

I think it will be granted by all that the value of a soldier to the army depends primarily upon his ability to accomplish a given amount of exertion without being incapacitated. Therefore, in so far as the efficiency of a soldier is concerned, the chief point to determine is: How much work is he good for? On this point will his classification depend. Therefore, in all cases of heart affections or those having symptoms which are commonly attributed to cardiac inefficiency, this is the main objective. In other words, what is the particular soldier suffering from and in view of the condition present, what is he actually capable of doing?

When first cases of V.D.H. and D.A.H. come under observation a concise but at the same time searching history should be taken and a physical examination made. At this point occurs the first sifting. In a certain number of cases one of the following conditions will be found:

1. Aortic disease.
2. Mitral stenosis and aortic disease together.
3. Mitral stenosis.
4. Myocardial disease with or without enlargement and with or without mitral incompetence.

The first three categories require little comment, as these patients all present unmistakeable signs of grave structural alterations in the heart. The fourth category is less clearly defined, and comprises:

(a) A number of patients in whom there is unmistakeable and considerable enlargement of the heart with or without mitral incompetence. In estimating enlargement, it is well to be guided by the maximal point of pulsation at the apex and not so much by percussion. Diffusion of the impulse to one or more rib spaces, or an impulse four inches from the mid-line, are not regarded as of grave importance if they occur alone, and especially is this the case in men who are heavily built, or in whom the heart action is rapid during the examination.

(b) Patients in whom there are grave disorders of the heart's action, with or without enlargement of the organ. These are rare, the most notable examples being those in whom gross irregularity is constant from hour to hour and from day to day, and in whom the irregularity is accompanied by rapidity of the heart's action while the subject is at rest. They are examples of fibril-

lation of the auricles. A few patients will be found in whom auricular flutter and heart-block are discovered by instrumental examination. There are two further forms of irregular heart action which we encounter in a large proportion of our patients. The first is *extra-systolic irregularity*, giving rise to intermittent pulse or simple groupings of the pulse beats and an irregularity which may be identified when respiration is deepened, for it then consists of a waxing of pulse-rate during the inspiratory period and a waning during expiration. These two forms of irregularity are easy to identify by ordinary methods of examination and when identified should not, in our opinion, influence the category in which the patient is placed, or the question of discharge. All patients who present them are dealt with as though such signs were absent, attention being centred upon the remaining signs and symptoms.

(c) A high percentage of the fourth group is formed by patients in whom a systolic murmur is audible at the apex. When this murmur is harsh in quality and well conducted to the axilla and is at the same time associated with (1) an exaggerated first heart sound and accentuated or reduplicated second pulmonic sound, (2) a thrill, (3) a history of recent rheumatic fever or of two or more attacks of rheumatic fever, (4) severity and persistence of symptoms: it is considered with its associations to be of importance. Standing by itself, a systolic murmur is not considered significant, whatever the character of the murmur: in our experience many men who present this sign are capable of a great deal, if not of full and continued effort.

(d) Rare cases of severe cardiac pain, radiating to the left arm.

All these cases are obviously suffering from a grave condition of the heart itself. The treatment of such cases is, naturally, the same as in civilian life. We all know the limitations of civilians suffering from these conditions, which limitation is proportionately greater in a soldier.

The disposal of these men is a matter of policy more than a medical question. It is now understood that they shall be discharged from the army as soon as recognized.

The signs to which we attach little or no value in the first sifting of cases it may be well to tabulate: they are:

1. Extra-systolic or respiratory irregularity.
2. Simple acceleration of the heart's action.
3. Diffusion of the heart's impulse.
4. Short soft systolic murmur at apex.
5. Systolic murmurs in the aortic or pulmonic region.

Second Sifting. It will be evident that we carry over to our second sifting some patients who have comparatively insignificant organic lesions and their eventual disposal will depend upon their symptoms on exertion more than upon the physical signs. In our second sifting we are dealing in the main with patients in whom no clear signs of organic disease are discoverable, these are the patients to whom is applied the term D.A.H., that is to say patients who have symptoms but in whom no sign which we regard as a trustworthy sign of organic heart mischief can be discerned at the first or subsequent examinations. It is in respect of these patients that disagreement as to their eventual fitness for service is likely to arise. Therefore, it will be well to go into the character of these cases in some detail.

It is difficult to find a suitable name for such cases. At first we were inclined to call them cases of "irritable heart", a term less comprehensive than soldier's heart and yet more comprehensive than D.A.H. But we feel that this is not without serious objections as it implies a condition connected with some disorder of the heart itself of which there is no proof at the present time, as I will later try to show. We would much rather see used a term as "debility" or as the French have so aptly described these cases as "fatigue".

As I have stated above the cardinal symptoms are dyspnoea, palpitation, dizziness even to fainting, præcordial pain and fatigue. These symptoms may be present more or less continuously, but as a rule are produced or aggravated by exertion.

Many definitely date their symptoms from the time they first got out of bed, or in other words first exerted themselves after an infection such as rheumatic fever, dysentery, trench fever, pneumonia, the exanthemata, etc. Some cases date their symptoms definitely from shell shock or gassing and in these the onset of the above symptoms is usually quite sudden. Very few cases date their condition from severe physical exertion alone. But the combination of mild or severe infections with exertion, shell shock, bombardment, gassing, account for a large proportion of those whose symptoms commence during their military career.

A most important fact to be borne in mind, particularly by those responsible for the medical examination of the recruit, is that 43 per cent. of all patients invalided for this condition have had these symptoms prior to enlistment, and 12 per cent. acquired their first symptoms on training. Therefore, any soldiers who report sick for these symptoms should be carefully watched during

their training in order that they may not be sent on active service, for which they are palpably unfit. It has been my experience that these men, if they are enlisted, are given sedentary occupations in their regiments and are excused training. This is not conducive to making the man fit for service and when later placed on full training he promptly reports sick and may become an invalid in England unfit for active service. These cases, immediately their condition is known, should be dealt with as if they were patients and not despatched from Canada until it be proven by tests of actual exertion that they are fit for the rôle they will be called upon to play on active service.

As to the pathology of this condition, I have to acknowledge that we have been unable to solve it as yet. There is no evidence that this is a morbid condition in the usual sense of the word, but there is considerable evidence to lead us to believe that it is the normal condition unduly sensitive to exertion. First consider the commonest symptoms, dyspnoea and tachycardia (palpitation). During sleep the respiratory rate and pulse rate in these patients are normal. Therefore during absolute rest these functions are undisturbed. Similarly with the sense of fatigue, when at rest this is absent. It has been claimed by many that there is cardiac enlargement. But in fifty unselected cases which have been examined with the orthodiagraph, there has been no increase in the cardiac measurements, in fact the heart, if anything, is slightly smaller than normal.

As exertion produces symptoms it is reasonable to look for abnormal conditions resulting from exertion. We have made many observations before and after various exercises upon the pulse rate, blood pressure, respiratory rate, differential blood counts, quantitative blood counts, size of the heart, urinary acidity, various other urinary examinations, change in alveolar air, CO₂ toleration, chemistry of the blood, etc. In all of these examinations there is a variation from the normal in proportion to the severity of the symptoms produced by the exertion, *but*, if normal or healthy men are given sufficient exercise to produce symptoms of similar severity, then similar deviations from the normal are obtained.

In other words if:

A severe case does one unit of work.

A moderate case does two units of work.

A mild case does five units of work.

A normal man does ten units of work.

A trained athlete does twenty units of work with the same

symptoms, then the same changes will be observed in their pulse and respiratory rate, blood pressure, etc. In other words these changes after exertion are quantitative and not qualitative.

From the standpoint of the army, the pathology of this condition is at the moment of comparatively little importance, but a reliable method to determine the relative fitness of such men for duty is imperative for army medical officers. At an early stage we found it impossible to arrive at a satisfactory conclusion from the physical signs or consideration of the history. Consequently we instituted a series of test exercises upon which all such patients are placed. The exercises adopted are a selection from the code of army exercises. These offer many advantages: they are directed by a sergeant instructor thoroughly conversant with them, and in a position to maintain discipline amongst the men: they are in a large measure familiar to the men: they are exercises which many of the men who return to their depots will be called upon to undertake.

The individual exercises are grouped under the headings A and B and C (first part and second part), each of which occupies fifteen minutes, and under D.30 which occupies thirty minutes. The exercises are taken daily and in favourable instances a patient moves to a higher grade exercise after three or four days. He moves from A to B to C to AB (thirty minutes) to BC (thirty minutes) to C.30 (both parts AC) and finally to D.30. The objects of combining exercise groups in this fashion are first to decrease the work of the instructor (thus the three classes A, B and AB together occupy thirty minutes) and secondly, to use throughout the whole system relatively few exercises, so that they may be readily acquired and thoroughly learnt. Thus he passes through seven groups of exercises, in a scale of ascending severity. D.30 is eventually taken in combination with route marches of four or more miles without pack, with light pack, and finally in full marching order. Patients are examined after they first take a new exercise, or when they specially report themselves or are reported. Our patients gradually class themselves according to the highest grades of exercise which are borne without distress, and in estimating fitness for duty we are finally and chiefly guided by these tests. The appearance of a man coming from drill, his expression, his colour, his breathing, and excessive heart-rate (140-160) are invaluable clues to his tolerance of the exercise, and he is put forward or back, or maintained on his exercise after due consideration of these signs and his statement of his symptoms upon the exercises.

We have gone on the principle that a soldier's actual capacity to do the work is the only dependable test of his efficiency. Therefore, after eliminating cases with grave cardiac disorders of structure or rhythm we have classified all the remaining according to the amount of work they can perform without material symptoms. It is true that many of these cases have systolic murmurs but we have found that to be no indication of a soldier's incapacity to accomplish extensive physical exertion without distress, and feel that such physical signs should not be regarded as important.

Treatment. The benefit of carefully regulated physical exercises on these men is conspicuous. Both physically and mentally they improve in nearly all cases, particularly amongst those who have developed their symptoms on active service. The longer the history of the duration of the symptoms the less likely is the improvement to be sufficient to enable the soldier to be rendered fit for active service. Associated with physical exercises we have found occupations to be of benefit. Rest in bed, particularly for long periods of time, is undoubtedly detrimental. Many other remedies have been tried by us but without success.

Relation to Pensions. At first, cases which were unfit for active service at home or abroad were of necessity invalided from the army. But recently the reclassification for employment has allowed of these cases being retained in the service. But the disability in a small percentage only of these can be considered to be great in so far as civilian life is concerned. It has been found that these cases when they return to civil life can do a considerable amount of work averaging about forty-five hours a week. The disability should not be considered permanent, but a reëxamination and, if necessary, reclassification should be carried out at the end of the year.

THE DIAGNOSIS OF DISSEMINATED SCLEROSIS

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THE diagnosis of disseminated sclerosis, like that of most other diseases, is easy in well marked cases. A syndrome presenting intention tremor, nystagmus, ataxic and spastic paraplegia, pallor of the optic discs, extensor plantar reflex, exaggerated tendon reflexes, absent epigastric and abdominal reflexes, emotional disturbances such as uncontrollable laughter, with a tendency to alternate periods of exacerbation and remission of all or part of these symptoms, is unmistakable.

Rarely, however, do we meet with cases showing a perfect picture. Indeed, one may say with truth, that in very many cases we do not find Charcot's classical triad of symptoms, namely, intention tremor, nystagmus, and scanning speech.

It is in the so-called aberrant cases in which only one or more of these leading features is present that our difficulties arise, and we are obliged to employ negative as well as positive evidence in our attempt to make a diagnosis.

That symptoms, motor, sensory, reflex and mental, should vary greatly in number, combination and intensity, is not surprising in view of the variation in localization and extent of the patches of sclerosis in the brain medulla and spinal cord.

And, to confuse matters still more, Strümpell and others have described cases of pseudo sclerosis in which pronounced symptoms of disseminated sclerosis existed during life, but no morbid changes were found post mortem.

The morbid changes found in cases of true disseminated sclerosis may be described briefly as follows:

Insular patches of overgrown neuroglia scattered throughout brain and spinal cord, situated principally in the white matter, and

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of variable size and density. Large patches may extend over considerable portions of transverse sections of cord, medulla or pons. The largest patches are found in the white matter of the brain. Recent patches are softer and more gelatinous than normal tissue, while other patches are harder. The myelin sheaths of the nerve fibres involved in the patches have disappeared, the axis cylinders remaining bare. In some cases the latter have undergone degeneration. Ganglion cells remain some time and then fade away. The walls of the blood vessels are either normal or very little changed. A notable feature is the absence of ascending or descending degeneration in most cases. This distinguishes disseminated sclerosis from other conditions, such as disseminated myelitis and diffused syphilis in which multiple lesions are found.

While the patches are scattered irregularly throughout the nervous system, and any part may be affected, there are certain portions according to Erb which are especially liable to attack, namely the floor of the fourth ventricle, the walls of the lateral ventricle, the white substance of the hemispheres and the white tracts of the spinal cord.

The cause of disseminated sclerosis is unknown. Different theories have been advanced, but none proven. It is assumed that a so-called noxa or toxic body is diffused throughout the cerebro-spinal axis by the blood vessels or lymphatics.

Charcot held that the pathological process was a chronic interstitial inflammation leading to glia hyperplasia with secondary degenerative atrophy of the nerve elements.

Müller and Strümpell on the other hand have suggested that the process is endogenous, that is, that abnormally placed glia cells take on a vegetative activity with resulting glia hyperplasia.

Dawson, of Edinburgh, in an exhaustive article offers the following conclusions from his investigations.

That the underlying process is a subacute encephalo myelitis which ends in areas of sclerosis; that there is much in favour of the view that the disease is due to a specific morbid agent, probably a soluble toxin conveyed to the tissues by the blood stream, and that infectious diseases, cold, trauma, and physical shock predispose to the onset of the disease by lowering vitality and resistance; that fleeting early motor paralyses and psychic symptoms may be related to areas of sclerosis in association paths, and that remissions of these symptoms may be due to linking up of other association paths or opening up of new ones; that cortical areas share in the production of psychic symptoms, and that volitional tremor, al-

terations in speech and nystagmus may be the result of sclerosis spreading inwards from the ventricles and aqueduct.

It is difficult to believe that the symptoms in early cases result from stable morbid changes in brain and spinal cord, when one considers the remarkable remissions that occur. The hypothesis of a noxa affecting the nerve tissues primarily and producing increased glia formation secondarily through choking of perivascular spaces and lymph stasis is attractive.

A case illustrating complete remission of symptoms came to my notice in the out-patient of the Royal Victoria Hospital:

Jennie H., aged sixteen. Complaints. Loss of power in arms and legs.

History. In June, 1915, she noticed weakness and tremor of right hand, and could not write. After a month in the country these symptoms disappeared, but several months later returned. No other limb was affected at that time. The following summer she had the third attack. Vomiting was followed by marked weakness and tremor of right leg and arm. An interval of improvement was followed again by return of symptoms, and in December 1916, she came to the neurological clinic for treatment.

Present condition:—Cranial nerves normal. Coarse tremor both in arms and legs. Slight weakness in right arm, no wasting. Some spasticity in right leg. Incoördination by finger-nose test. No loss of joint sense.

Reflexes in arms, very brisk. Epigastric and abdominal absent. Knee jerks much exaggerated. Rectus and ankle clonus in both limbs. Plantars—extension right and left. No Romberg sign, but some unsteadiness in walking.

Cerebro-spinal fluid; Wassermann negative. Gold test, Noguchi, Nonne, negative. Cell count, twenty-nine.

Eyes, fundi normal.

The patient was admitted to the hospital and discharged after several weeks. She reported to the out-door clinic several times during the next six months, and all symptoms had disappeared. She had full use of her limbs, no tremor, no spastic gait.

Possibly the noxa itself may be directly productive of symptoms throughout the whole course of the disease, even when distinct sclerotic changes have occurred. I venture to hazard this theory as a possible explanation of the variation in symptoms. Dawson's idea of the opening up of new association paths seems inadequate to cover all cases.

Leaving theories aside and turning to practical matters, we

find that many and various symptoms have been grouped together under the heading of disseminated or multiple sclerosis. The leading group comprises Charcot's classical triad of intention tremor, scanning speech and nystagmus, to which I would join chronic ataxic paraplegia. A secondary group comprises emotional disturbances, psychoses, pallor of optic discs, optic neuritis, transient paralyses of external ocular muscles, affections of the optic, olfactory, trigeminal and hypoglossal nerves, epileptic and apoplectic seizures, paræsthesias, weakness of upper extremities, increased tendon reflexes, absent epigastric and abdominal reflexes, extensor plantar reflexes, root pains, girdle sensation, bladder weakness, and finally decubitus with complete paraplegia.

The disease may set in suddenly, as after exposure to cold and wet, or gradually; many or few of the above symptoms may be present in combination; the disease may coexist with syphilis or dementia paralytica or hysteria.

In some cases a clinical differentiation from spinal syphilis, apart from serological evidence, is impossible.

That we cannot accept Nonne's opinion that intention tremor, nystagmus and scanning speech in combination are not found in cerebro-spinal syphilis, is proved by the following case:

Mrs. C. F. R., age twenty-four, admitted to hospital May 16th, 1917, complaining of shaking of limbs and head.

History of present illness. Was quite well until two years ago. One day while working her legs suddenly became weak. She was two months pregnant at that time. The weakness became more marked, and she began to stagger when walking. The hands and arms began to shake, and her eyes kept moving. Although her condition grew progressively worse she did not remain in bed. She felt dizzy when walking. She had no headaches, no pain, no digestive symptoms, but she had some slight bladder disturbance.

The family history was negative as far as could be obtained.

She had two children, the youngest six months old; no miscarriages.

Present condition. The patient is a well nourished young woman. Her eyes are continually moving. She has lateral nystagmus. The optic discs are pale. The pupils react. There is no paralysis of ocular muscles, no facial paralysis. There is marked intention tremor in the arms, and the head shakes on attempting any movement of the arms or hands. The arms are slightly spastic, the legs decidedly so. There is no apparent involvement of the sensory nervous system.

Reflexes. Arms, brisk, epigastric and abdominal absent, knee and ankle jerks very brisk, extensor plantar reflex both sides.

The patient is unable to walk without assistance. Her speech is distinctly scanning.

A diagnosis of disseminated sclerosis was made, but revised after a serological examination of the spinal fluid had disclosed a four plus Wassermann.

From a clinical point of view the diagnosis was justifiable; but if we regard a strongly positive Wassermann reaction of spinal fluid with lymphocytosis as conclusive evidence of syphilis of the brain and cord, then only two conclusions are possible in consideration of this case, either that the classical symptoms of disseminated sclerosis may be exhibited by cases of cerebro-spinal lues, or that the two diseases coexist. The latter is perhaps unlikely, but not impossible.

The following case reported by Nonne illustrates the development of disseminated sclerosis in a patient who had acquired syphilis. A woman aged thirty-nine, married five years, sterile, had lip-chancres ten years before. The primary and secondary stages had been thoroughly treated with mercury. Since then there was no further manifestations of syphilis. The present illness had begun one and a half years ago with paræsthesias and motor weakness of the lower extremities. Gradually a spastic paralysis developed. Standing, walking, and movement of legs were impossible. The arms were paretic and contracted. There was hyperæsthesia to touch, temperature, and pain. The bladder was paretic. The cranial nerves were normal. The patient died of decubitus after four years.

The autopsy disclosed an advanced stage of multiple sclerosis of spinal cord. There was no evidence of syphilis in the cord or internal organs.

How unsafe it is to diagnose multiple sclerosis on clinical evidence alone is shewn by the following case:

G. E., a man aged thirty-three, powerfully built, came under my observation in the out-patient department, complaining of feeling nervous. He became very irritable and bad tempered and began to stutter. His memory began to fail and he began to stagger about like a drunken man. He was emotional, with uncontrollable outbursts of laughing and crying.

Present condition. Mentality slow, pupils equal, moderate size, react to light and accommodation. No definite nystagmus. There was some spasticity of arms and legs, and incoördination of

the legs. Reflexes: Upper extremities, very brisk: epigastric and abdominal, active; knee and ankle jerks very brisk. Babinski and Oppenheim present. No Romberg. Spinal fluid, Wassermann, triple plus. He improved rapidly under specific treatment. Five months later the following notes were made: Mentally much better, memory good, feels well and has been at work, no headaches, no stuttering, no incoördination, no ataxia.

These cases are cited in order to emphasize the necessity of excluding syphilis by every available test in all cases that bear any resemblance, however strong, to multiple sclerosis.

Other cases can be found in the literature of the subject shewing the coexistence of the two diseases, multiple sclerosis and syphilis. Since the latter is a comparatively curable and the former an incurable disease, it behooves us to take care that no case of curable meningo-encephalitis escape detection. In reading reports of cases of multiple sclerosis written a few years ago when the diagnosis of cerebro-spinal lues was not as sure as it is at present with our improved methods, one cannot avoid the conclusion that the symptomatology of the two diseases was confused, and that many cases reported as multiple sclerosis were probably lues. Various authors declared that in certain cases of paraplegia it was impossible to differentiate, and that the course of the disease and the therapeutic test were the only means of deciding the question.

In such cases the symptoms common to both these diseases, the spinal type of multiple sclerosis and spinal lues, were paræsthesias and weakness of the lower extremities or paraplegia, exaggerated tendon reflexes, Babinski, weakness of bladder function and spasticity.

Although the morbid anatomy of the two diseases is in the main quite different, the one with sclerotic patches scattered irregularly, demyelinated nerve fibres and shrunken ganglion cells, the other with gummatous infiltration, marked vascular changes and secondary degeneration; yet in both sclerotic changes occur, and in both the net result of the morbid changes may be expressed in one phrase, interference with adequate and continuous nerve supply motor and sensory and inhibition, such interference not being confined to special tracts as in the so-called system disease.

Leaving aside the great question of syphilis, let us now consider the question on what grounds may we safely base a diagnosis of multiple sclerosis, other diseases having been as far as possible excluded.

Mettler holds that cases exhibiting Charcot's classical triad

are comparatively rare, and had found in his experience that the most distinctive features are spastic paraplegia with plus reflexes and Babinski, optic atrophy, and tremor, the word tremor including intention tremor of hands, nystagmus and scanning or staccato speech. Other associated symptoms are of much less importance; one cardinal sign is not enough to warrant a diagnosis, and that diagnosis should not be based upon mental changes, fugitive pains, slight paræsthesias, other sensory disturbances, transient cranial nerve palsies, apoplectic and epileptiform seizures, bladder and rectal irregularities, pupillary inequalities and bulbar manifestations, since all these symptoms may be found in other maladies.

Collins and Baehr analyze the clinical histories of ninety-one cases and offer the following conclusions:

That the fully developed Charcot type of the disease is but rarely seen; that while there can be no rigid groupings of types of the disease, three general groups can be assumed, a spasticparetic, an ataxic and a hemiplegic group. The best single aid in the differentiation of the disease is the condition of the cerebro-spinal fluid. The absence of the abdominal reflexes, upper and lower, is an important diagnostic sign.

To cite all the symptoms grouped under the heading of multiple sclerosis and the various nervous conditions under which individual symptoms may be found, would be almost an endless task. A few of the more important ones, however, might be mentioned.

Nystagmus occurs in cerebellar and labyrinthine disease, transient cranial nerve palsies, epileptiform seizures and spastic paraplegia in cerebro-spinal lues, paræsthesias in syphilis and hysteria, tremor though perhaps not intention tremor, in alcoholic or lead poisoning, paralysis agitans and functional nervous conditions, affections of speech in dementia paralytica and bulbar conditions, mental changes in various psychoses, bladder weakness in various spinal cord diseases, and so on.

It must be insisted upon, therefore, that all other nervous and constitutional diseases must be excluded by the absence of the symptoms peculiar to those diseases before making a diagnosis of multiple sclerosis.

Perhaps our greatest difficulty lies in that large group of cases in which a few indefinite symptoms are found which cannot be attributed to multiple sclerosis exclusively, but in which we have excluded other diseases. In these cases it is often impossible to make a positive diagnosis of multiple sclerosis, however probable

such a diagnosis may appear to be, and only the course of time, perhaps years, will decide.

The following case, reported by Goodhart, is a good illustration of this point:

A girl, aged twenty-four, had sensory paresis of the hands and flacid motor paralysis of the lower extremities. This disappeared after six months. After an intermission of seven years the classical symptoms of multiple sclerosis appeared.

An acute onset may be misleading. Case reported by Spiller:

A man, aged twenty-five, after exposure to cold and wet and severe labour felt stiff in the legs next morning. He felt pains in his thighs and could hardly walk. This condition lasted a month, after which he had sharp pains in his right leg with marked rigidity.

There was little change for several months. Examination then was as follows: Mentality normal, speech scanning and slow, slight tremor of the tongue, epigastric reflex normal, abdominal and cremasteric absent, patellar reflex plus, ankle clonus and Babinski present, sensation in feet delayed, gait markedly ataxic, some ataxia of upper limbs, intention tremor of the right arm, and nystagmus. At the necropsy typical disseminated sclerosis was found. During the first month of this man's illness a diagnosis of multiple sclerosis would have only been a guess.

In cases of indefinite pains, stiffness and weakness of the legs, especially when persistent, the patient must not be put off with a diagnosis of muscular rheumatism, nor should one be too much inclined to attribute paræsthesias or mental changes or tremor or paralysis of a limb to hysteria. Every possible means of examination should be employed. The blood and urine should be examined, the optic discs examined with the ophthalmoscope, the nervous system, motor, sensory, reflex and mental, should be most carefully examined, and finally a complete history of the patient's past and present illnesses obtained.

The following conclusions are offered:

1. That indefinite and fleeting symptoms should not be lightly passed over, but given due consideration.
2. That the history of every case is of the utmost importance.
3. That all other diseases must be carefully excluded.
4. That in every case presenting symptoms of multiple sclerosis, no matter how marked, the spinal fluid should be obtained and examined.

TUBERCULIN, ITS NATURE AND ACTION

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ALTHOUGH it is now many years since Koch¹ announced that he had discovered a new cure for tuberculosis in what he named tuberculin, there is still a great deal of confusion as to what this substance really is and as to what it does. Tuberculin is chiefly a protein derived from the bodies of tubercle bacilli, which is either in solution or in suspension as an emulsion. While commonly spoken of as a serum or lymph, it is neither of these and is absolutely different from the antitoxic sera, as exemplified by the well-known diphtheria and tetanus antitoxins. Tuberculin does not contain living tubercle bacilli and is therefore incapable of itself of causing tuberculosis. Since Koch's tuberculin was first announced numerous modifications have been tried and named until probably forty or fifty varieties have been made in an attempt to obtain some product which would have all the therapeutic activity of the original preparation without any of its disagreeable or dangerous properties. Of all these modifications there are only four or five which are now generally used. These are Koch's Original or Old Tuberculin, called O.T., Denys' Bouillon filtrée or B.F., Koch's New Tuberculin or T.R., and the Bacillus Emulsion or B.E. The first two are solutions while the last two are emulsions of dried bacilli.

PREPARATION OF TUBERCULINS. O.T. or Old Tuberculin is made by boiling a broth culture of tubercle bacilli for one hour, filtering this through a Berkefeld filter, and then heating the filtrate slowly until it has evaporated to one tenth of its original volume. Denys' B.F. is simpler to prepare and is merely the filtrate obtained by filtering the bouillon on which tubercle bacilli have grown for from six to eight weeks through a Berkefeld filter, the filtrate being tested culturally and by inoculation to be sure of its sterility before being used. The Bacillus Emulsion is a suspension of the dried bodies of tubercle bacilli, which have been ground to a powder, in

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normal salt solution with 50 per cent. glycerine. This is so standardized that 1 c.c. of the finished product equals 0.005 gm. of the dried bacilli. T.R. is similar to the emulsion except that the bacilli are first shaken up with distilled water and then allowed to sediment, the supernatant fluid being removed. This fluid is called T.O. or "Tuberculin Oberstand." The sediment of bacilli is then emulsified with normal saline solution and 20 per cent. glycerine and standardized, so that 1 c.c. equals 0.01 gm. of the residue of dried bacilli. These various tuberculins are all very similar in their action and the choice of which one to use is largely a matter of personal preference.

What is the active principle of these different preparations? This is a difficult question to answer, but it is probable that the active agent of all of them is the dissolved protein, derived from the bacillary bodies. It cannot be a toxin, secreted or excreted by the bacilli during their growth, for the existence of any such toxin has never been proved, and all experimental evidence is against this. In the soluble tuberculins, as O.T. and B.F., the protein is probably derived from the breaking down of a certain number of bacilli and the solution of their body proteins in the medium, while in the emulsions the finely ground bacillary bodies are present in suspension. Tuberculin is not a true or primary toxin or poison. A toxin or poison, properly understood, is a substance, which when introduced into a normal animal in a certain amount, usually minute, is capable of causing certain definite symptoms harmful to the organism and, if in sufficient amounts, death results from the direct action of the substance. As examples of such toxins, ricin and abrin from the vegetable kingdom, the snake venoms from the animal kingdom, and the toxins of the diphtheria and tetanus bacilli might be mentioned. Unlike these toxins, tuberculin is perfectly harmless to a normal animal, even when given in enormous doses. Krause, in the Saranac Laboratory, injected 25 c.c. of a filtered watery extract of tubercle bacilli intravenously into a guinea pig of ordinary size, the only effects being a serous diarrhoea for a few days, the result of the greatly increased amount of fluid in the animal's body. Hamburger² emphasized the harmlessness of tuberculin to non-tuberculous persons, stating that old tuberculin had absolutely no recognizable poisonous action on the "virgin" human organism. He gave forty-three children of from 0 to fourteen years of age, all of whom had shown a negative skin test, 10, 50 and 100 mgrm. of old tuberculin subcutaneously without any general symptoms resulting. One girl of six years was given 500 mgrm.

without the slightest general effect. In contradistinction to this inertness in the non-tuberculous, the results of an inoculation of tuberculin, even in minute quantities, are totally different if given to an animal, human or experimental, which harbours tubercles in its body. The animal reacts to the inoculation violently and characteristically, and if the dose is sufficiently large, death results in a few hours. It was an observation by Koch that a guinea pig, already tuberculous, reacted to a subcutaneous inoculation of tubercle bacilli differently from a normal animal, that led to his investigations which resulted in the discovery of tuberculin. This altered reaction to reinfection in tuberculous animals has since been more fully investigated, but its importance to the study of tuberculosis has only been recognized in the last few years. As a result of these studies in reinfection, the broad statement can be made that if an animal has an anatomic tubercle anywhere in its body, all its body tissues are altered in some way so that the response to a fresh infection with tubercle bacilli differs from that of a normal animal. In like manner, the body tissues of a tuberculous animal show an altered reaction to tuberculin and we now know that the presence of an anatomic tubercle is necessary for the development of tuberculin hypersensitiveness. Supplemental confirmation of this is given by the fact that attempts to produce this hypersensitiveness by inoculations with soluble tuberculins or filtered extracts of the bacillus have been uniformly unsuccessful, although from time to time observers have claimed to have succeeded in attempts of this nature. It has also been impossible to transfer this tuberculin hypersensitiveness to normal animals by inoculations of the serum of patients or other animals which possess this property. Baldwin³ has shown further that the removal of a localized tuberculous focus by surgical means results in the speedy loss of sensitiveness to tuberculin in experimental animals. It therefore seems certain that the basis of the tuberculin reaction is to be found in the tubercle itself, which in some way, as yet unexplained, causes an alteration in all the body tissues so that they react differently from normal tissues to the proteins derived from the tubercle bacillus or to the tubercle bacillus itself. This altered condition or "allergy" manifests itself as an acute inflammatory change in the tissues into which tuberculin is introduced. I have recently been able to produce in tuberculous guinea pigs, by inoculating the pleural cavity with a filtered watery extract of tubercle bacilli, a slight but definite acute pleuritis with an exudate of fibrin and a small amount of sero-purulent effusion, containing chiefly poly-

morphonuclear leucocytes. The same effect, only more marked, is produced by inoculating the pleural cavity of tuberculous animals with old tuberculin or with emulsion of dried and pulverized tubercle bacilli. In these experiments the acute inflammation of the pleura was most marked and quite unmistakeable.

What effect has the tuberculin on the tubercle itself when it reaches the focus by the blood or by the lymph? Here again we have an inflammatory change which can be readily seen in superficial lesions, as lupus patches or tubercles in the larynx as well as in and around tubercles in experimental animals, which have been killed during a general tuberculin reaction. This inflammatory condition is accompanied by congestion around the tubercle, by dilatation of the vessels and consequently by an increased give and take between tubercle and blood stream. This idea is not new and was recognized shortly after Koch announced his discovery of tuberculin. Kromeyer⁴ in 1890 examined reacting tubercles and found inflammatory changes in the neighbourhood. Krause's⁵ recent experimental work on the general tuberculin reaction emphasizes this view. With increase in the circulation around the tubercle there passes into the blood stream from the tubercle, something, the nature of which is not definitely known, which causes the symptoms which we recognize as the general reaction and which, if in great enough amounts, will cause death.

From what has been said, it is evident that tuberculin can produce three different effects. (1) Local, at the point of inoculation, an inflammation due to the altered tissue reaction. (2) Focal, an inflammation around the tubercle. (3) General or systemic, the result of absorption from the focus, this absorption being facilitated by the focal inflammation.

With these points in mind we can now consider the clinical application of the phenomena of the tuberculin reaction. Tuberculin is used for one or other of two purposes, first, as an aid in diagnosis, and second, as a therapeutic agent. As its diagnostic value is now generally recognized, little need be said of its use for this purpose. It may be applied locally by scarification of the skin as in the von Pirquet test, by inunction as in the Moro or percutaneous method or by injection into the epidermis, the intradermic procedure of Moussu and Mantoux. These tests are quite harmless if ordinary precautions are taken. Another local test is the installation of a drop of diluted or purified tuberculin into the conjunctiva. This has no advantages over the other local tests and has the decided disadvantage that occasionally

ulceration of the cornea with resulting opacities has followed severe reactions. Such local reactions depend on the sensitization of the tissues by the presence of tubercle in the body and the inflammatory results of the application of tuberculin to such hypersensitive tissue. The subcutaneous method which was the first one to be used depends on the general symptoms produced by absorption of substances from the inflamed tubercle, this inflammation being caused by the tuberculin which reaches the focus by the blood or lymph. This method is not without danger and should only be employed with a full understanding of its mode of action and of the possibilities of doing harm by uncontrollable inflammation of the focus of disease. It is important to remember, but unfortunately frequently overlooked, that the various tuberculin reactions do not differentiate anatomic tubercle, which is perfectly compatible with good health from an active clinical tuberculosis. Autopsy studies, as those of Naegeli⁶ and Burkhardt⁷, have shown that the great majority of persons above fourteen years of age have somewhere in their bodies a focus or foci of tubercle formation. These autopsy figures are corroborated by the various tuberculin reactions, which show that the majority of adults are hypersensitive to tuberculin. If this fact is remembered, we will be in a better position to appreciate the value of a tuberculin reaction when used for diagnosis. A positive reaction to tuberculin, while absolutely specific in diagnosing the presence of anatomic tubercle, does not mean of necessity that there exists a diseased condition caused by active tuberculosis. Many persons have been condemned to a diagnosis of tuberculosis, merely because they have shown a positive reaction to tuberculin, whereas the cause of the reaction was a latent or healed tubercle which may have had no relation whatever to the symptoms for which they have sought advice.

Ideas as to the therapeutic value of tuberculin have undergone many changes in the past twenty-five years. When its discovery was first announced it was hailed as the long looked-for cure for all forms of tuberculosis, but when reports began to be published of the many unpleasant and even fatal results following its use the remedy fell largely into disuse. A few, however, saw that it was a potent remedy and that it could be of benefit to the tuberculous patient if only the dangerous results could be eliminated. Numerous purified tuberculins were tried in an attempt to discover some modification having all the benefits without the disadvantages of the original substance, but it was found that when the reactive properties were removed the beneficial results were also done away

with. With the knowledge, obtained from clinical observation and animal experimentation, that the doses first recommended were much too large and that dangerous reactions could be reduced to a minimum by using smaller doses, the pendulum of opinion swung back to the side of tuberculin and for several years almost every physician treating tuberculosis used one or other form of tuberculin. After some years of this period of general but cautious use of tuberculin, the question was raised as to whether the results obtained in treated cases were any better than those obtained in persons who had not received this form of treatment. Papers were published and statistics compiled to prove its advantages or its worthlessness, but the practical result of the discussion was that the wide spread use of tuberculin had been generally abandoned except by a few enthusiasts. This is the position at the present time and the question of its efficacy is still undecided in the minds of the majority of medical men. What is the reason for all this confusion? Surely after twenty-five years of use we should be in a position to know whether any given remedy is of value or not and whether our patients should be advised to take it or leave it alone. The answer to this question seems to me to lie in the very general misunderstanding of even the most rudimentary facts about tuberculin. It has been given in the majority of cases without a clear idea of what it is or what it will do to the patient. We have used it without being sure of what results we hope to obtain except in the very general way that we want to arrest the disease and if we have understood the end results desired, we have not thought out how tuberculin is to do what is expected of it. In a loose way there have been statements made about the suppuration and necrosis of tubercles, about antitoxic and bacteriolytic action, about enzymes and anaphylaxis and hypersensitiveness until we have been lost in a maze of words which have confused rather than clarified the discussion. This complicated subject will be much simplified if we confine ourselves to what we know regarding tuberculin and its action. It is well established that tuberculin causes an inflammatory reaction in and around the tubercle; by this reaction the tubercle is opened up more freely to the blood and lymph and that this inflammation favours fibrosis and the consequent walling-in of the tubercle which is what we recognize as healing. Now if we can so graduate our dosage as to react the sluggish tubercle without over reacting it, we will do good. If, however, the dose is so small that it does not react the tubercle the treatment will have no beneficial effects, while if the dose is so great that the reaction is excessive

and uncontrollable we are doing harm. This is apparently a simple proposition and would be so were we dealing with a single tubercle or a group of tubercles that we could have directly under observation, but the problem is complicated by the fact that in clinical tuberculosis we are dealing with a diseased state in which there are tubercles of varying ages and in varying stages of development and of different histological structure, some cellular, some caseous and necrotic and some well enveloped with fibrous tissue. It can be readily seen that an amount of tuberculin which will react a recent cellular tubercle will have no effect on an older fibrous one, while an amount sufficient to cause an inflammation in these older firmer foci will over-react the more cellular ones. Thus no given amount of tuberculin should be expected to benefit all of a person's diseased tissue. Again, our means of estimating the results of our dosage are indirect and inaccurate, depending largely on the subjective symptoms of the patients, which are notoriously inexact and misleading. Add this to the difficulty of correctly estimating the best dosage to give, which must be large enough to have an effect, but not so large as to do damage, while the disease is one with a constantly changing pathological and clinical picture, no case steadily improving and none steadily becoming worse, and the complications of the subject of tuberculin therapy become apparent. While it is foolish to maintain that in tuberculin we have a "cure all" for tuberculosis, it is equally foolish to say that it has no therapeutic activity, as some men do, and the middle course is the only safe and logical one to take, namely, that tuberculin is an agent which definitely affects the individual tubercle and so influences the course of the disease, favourably if properly administered to suitable cases, and harmfully if incautiously given. To obtain a favourable result it must be administered with an intelligent understanding of its action and of the results we hope to obtain.

SUMMARY

The active principle of tuberculin is the protein derived from the bodies of the tubercle bacilli. This is not toxic to normal animals but produces definite reactions in tuberculous animals. The basis of the tuberculin reaction is the tubercle itself. Tuberculin diagnoses specifically the existence of tubercle but does not differentiate tubercle, causing no symptoms, from active clinical tuberculosis. The general tuberculin reaction is produced by absorption from the tubercle, while the local reactions are caused by an allergic condition of the tissues. The benefits of tuberculin treatment de-

pend on the slight focal inflammatory reactions produced by carefully regulated dosage.

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DR. WAYNE BABCOCK, principal of the Samaritan Hospital, Philadelphia, has just completed a marvellous piece of surgical work. In a case of injury to the head where some inches of the skull bone had been completely shattered, Dr. Babcock removed the damaged bone. After trimming the edges of the fracture, he fitted into place a bone patch made from a shoulder blade of mutton which had been previously stewed for some days. By a series of boilings he extracts the animal matter, then cuts the bone to shape and perforates it with holes about half an inch apart. The sterilized bone is brought into contact with the edges of the living bone and it is fastened in its place by a few stitches of catgut. The live bone now sends new blood vessels into the porous dead bone and thus it is revitalized. Hitherto the operation has been most successful in placing damaged bone at the bridge of the nose.

THE CUTANEOUS MANIFESTATIONS OF SYPHILIS

By A. V. GREAVES, M.B. (Tor.)

Captain, C.A.M.C.

THE recognition of the cutaneous manifestations of syphilis, to be in any degree complete, must include a knowledge of the histology of the normal skin, a knowledge of the pathology of syphilis as related to the skin, and a fairly wide knowledge of cutaneous diseases other than caused by the *treponema pallidum*. To attempt such a comprehensive survey of dermatology is beyond the scope of a paper, be its dimensions never so great; and reference will be made only to such points in the histology and pathology of the skin as will render understandable a few of the commoner cutaneous lesions of syphilis, and a few hints on their recognition and differential diagnosis.

The skin is composed of three layers, from without inwards, viz; the epidermis, the corium, and the tela subcutanea; the epidermis constitutes the horny or true protective layer, and is non-vascular; the corium, or true skin, contains the blood and lymph vessels, nerves, sebaceous and sudoriferous glands and hair bulbs, all enmeshed in a fibrous framework, formed by connective tissue fibres, elastic fibres and a few unstriated muscle fibres; the third layer, the tela subcutanea, is briefly the connecting link between the corium and the underlying structures.

It will easily be seen that, anatomically speaking, the corium is the important layer of the skin.

In considering the pathology of the skin, the fact must never be lost sight of that inflammatory change here follows a precisely similar course to inflammatory change in any other structure; any apparent difference being a purely artificial or accidental one, due to the environmental influence of the particular anatomical structure involved.

When the classical picture of inflammation is borne clearly in mind and considered in relation to the special structural arrange-

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ment met within the skin, lesions become readily understandable which would otherwise be obscure.

A few remarks on the pathology of some of the lesions of the skin may perhaps be not out of place here.

A *macule* is a circumscribed, non-elevated, change in the normal colour of the skin; or, simpler yet, a *patch of discolouration*.

A macule may be caused in several ways; (1) by a deposit of hæmoglobin in the skin; (2) by simple dilatation of the vessels supplying the skin causing a hyperæmia; (3) by alterations in the normal pigmentation of the skin, either by way of an increase or a decrease of pigment.

A *papule* is an apparently solid, circumscribed, elevation of the skin; papules are arbitrarily limited to the size of a pea, simply for purposes of classification. The formation of a papule is simple, and may be reasoned out without difficulty, when one remembers that there is always *tumour* or swelling as a result of inflammation, if the lesion is inflammatory; if it is not, then consideration of the different elements forming the skin will suggest the structure which may be affected by the increase in size.

A *vesicle* is a circumscribed elevation of the skin containing serous fluid. Vesicles may be of two kinds, viz: parenchymatous, or interstitial; the former are caused by the distension of the individual Malpighian cells of the skin with serum, thus forming a multilocular vesicle; the latter are caused by a collection of fluid *between* the Malpighian cells; this gives rise to a unilocular vesicle.

Arriving at the particular cutaneous manifestations of syphilis, the following quotation from Sir Malcolm Morris is interesting. He says: "No disease is more likely to perplex the inexperienced on account of the protean character of the lesions which it causes and the extraordinary closeness with which it often imitates those produced by other affections." This remark is nothing but a statement of a fact, which every syphilologist fully realizes; at the same time it refers, I think, to the skin lesions of syphilis divorced from other manifestations of the disease, and perhaps for this reason conveys a somewhat different idea to what was intended. A skin lesion should never be considered in the light of a skin lesion only; it should be considered as the symptom of a constitutional condition, and as such, other symptoms should be sought. The diagnosis of an obscure skin lesion is often cleared up in this manner and of no lesions is this more true than those whose origin is luetic.

The clue to many a doubtful case of syphilitic rash may be found by examination of the mouth, a glance between the folds of the

nates, palpation of the inguinal, cervical, and epitrochlear glands, etc. The history of the patient too, will sometimes turn a doubt into a certainty. A case illustrating this point was admitted into our syphilis wards a few days ago. The patient was a man aged forty-six; married; he had a well marked rash, presenting many characters pointing to a luetic origin but still somewhat atypical; other signs of syphilis were absent; his history, however, furnished the necessary clues; he had not married till he was thirty-two years of age, thus leaving his early manhood open to suspicion of considerable irregular intercourse, and his wife had had three miscarriages and had lost a child in early infancy. A diagnosis of syphilis was made and was later supported by a three plus Wassermann.

Turning our attention to the characters of syphilitic rashes, I will, first, refer to them in a general way; later discussing their particular features from a diagnosis standpoint.

The special characters of the secondary lesions of syphilis are:

1. Polymorphism; that is, the presence at the same time of lesions of different types. For instance, macules, papules, and scaly spots may all be in evidence together. This is exactly what one would expect, remembering that the cause of the eruption is a *generalized disease*. At the same time the size of the individual lesions does not vary much.

2. A wide dissemination. The lesions are abundant in quantity and occupy a wide area of skin. They are also symmetrical. Morris considers this the most distinctive characteristic of the eruption as a whole.

3. A peculiar colour. While this peculiarity of colouring is not in itself confined to syphilitic lesions, taken in conjunction with other characteristics it helps to form a complete picture.

4. A uniformly round shape. The individual lesions are either round themselves, or tend to form circular figures.

5. Absence of irritability.

Bearing these general characteristics in mind, we will now examine the different types of lesion in detail.

The earliest to appear is the *macular syphilide*; often referred to as the roseola. This usually makes its appearance about a month after the initial sore. It is a widely spread rash and covers practically the whole skin area, excepting the face, where it is exceedingly uncommon to find it. The individual lesions are macules, round or oval, when their borders can be distinctly defined; but it is far more commonly seen as a very ill defined rash, the borders of the

individual lesions fading into each other, giving the skin an appearance that may best be described as a "mottling". This is especially the case in the earlier stages and later when the rash is beginning to fade, and it is at this time that it may be missed entirely, especially if the skin be examined piecemeal, with the eye at close quarters; the patient should be fully stripped and the general appearance of the skin noted from a little distance; the mottled effect is plainly apparent in this manner. In artificial light, too, the rash is quite difficult to make out and daylight should be used when possible. The colour is at first a faint rose, but this becomes stronger and gradually assumes a pinker hue. There is no scaling and no itching. Coincident with this early rash there is almost always a granular condition of the pharynx; this latter condition may be considered as the equivalent to the skin eruption as affecting the mucous membrane of the throat. The rash usually begins to fade in two or three weeks, but may last longer; moreover, it often recurs within the first year and this becomes a point of importance in diagnosis, when elicited from a patient in questioning. After persisting for a variable time, the macules which are at first due to hyperæmia of the papillæ of the skin, fail to disappear entirely on pressure. This is due partly to the presence of some infiltration, and partly to some pigmentation of inflammatory origin. Morris remarks on the action of cold in intensifying these lesions; this could be accounted for, in part at least, by the natural blanching of the normal skin between, showing up more distinctly the more permanent pigmentation.

The macular rash is followed, or indeed often has superimposed upon it, the papular syphilide; with the appearance of this, there is demonstrated the characteristic, referred to previously, of polymorphism; from this stage onwards we may expect to find on the skin almost any lesion of syphilis, associated with any other lesion in a given case.

Papular syphilides may assume several different forms, each possessing some special characteristic, while conforming to the general type of syphilitic rash. The commonest type by far is known as the *lenticular syphilide*; this is a papule about one third of an inch in diameter with a shining rounded top, often possessing a scaly ring at the edge; the distribution is very widespread, almost always including the face; it is not so profuse perhaps on the lower limbs as on the upper part of the body; there is not much tendency to any special grouping; in colour, it varies from a fairly dull red to a ham tint, the latter being more usual; on palpation it feels infil-

trated, but is not shotty, as it is sometimes described; the shotty sensation imparted to the finger by variola in its early stages is quite different, and is correctly described by that adjective. Along with this type there are often many papules present, rather flattened than rounded; this flat eruption may be scaly; it is then termed a *papulo-squamous* syphilide. A papular eruption is sometimes seen affecting the forehead just at the hair margin; this is known as the *corona veneris*, and must be carefully differentiated from the *corona seborrhœica*, which is always associated with a seborrhœic condition of the scalp and frequently with seborrhœic lesions elsewhere; itching is a prominent feature in seborrhœa, whereas it is usually absent in syphilis. Another type of papular eruption that is sometimes seen is the *corymbose syphilide*; the most frequent site of election of this type is the back, especially along a transverse line drawn through the centre of both scapulæ (McDonagh). The structure of the corymbose syphilide is best made out with the aid of a small lens, when it will be seen to consist of a central papule surrounded by tiny miliary papules, about the size of a pin's head, involving the hair follicles. In this way there is formed a grouped lesion with a central large papule ringed about with tiny ones; this group forms the unit of the rash. The tiny papules referred to as arising from the hair follicles, are occasionally present unaccompanied by the large central lesion, forming the *follicular syphilide*; this is best seen in the same situation as the corymbose syphilide, viz.: between the scapulæ. It is supposed that this type of rash is indicative of a severe infection.

A characteristic of the papular syphilides is that there is marked staining after the retrogression of the lesions, this may last for years, and its presence is of use in diagnosis.

Another eruption, not infrequently seen, is the squamous syphilide. This is really a papulo-squamous lesion, as the base is formed by a large flat infiltration; but the most distinctive and characteristic feature is the covering of scales, hence the name squamous. The favoured sites are the face, neck, back and in the bends of the elbows and behind the knees. The site of election is important in differential diagnosis as the likeness to psoriasis may be striking; there is this important difference, however, that a squamous syphilide is exceedingly rare on the elbows and knees, while these points are the favoured locations for psoriasis lesions. In psoriasis, too, when the scale is removed from a patch, there is a vascular area exposed, with a number of tiny bleeding points, whereas in the syphilide, the base is dull red without bleeding points.

A papular syphilide may in special situations undergo a further development by overgrowth of the papillæ; in this manner is formed the so-called *mucous patches* in the mouth and the *condylomata*, found in moist areas, such as between the folds of the nates and the flexures, etc. Papular syphilides may degenerate and form *pustular syphilides*; the diagnosis of this lesion may offer great difficulty at times and the following points must be borne in mind. The lesion in syphilis is never primarily a vesicle; since, as the organism develops in the corium and degeneration here always leads to pustular formation (McDonagh) no vesicular lesions will be found. Also in the one case the roof of the lesion is thin and easily collapsed, being covered only by epithelium, while in the other it is firm and strong, as the lesion originates in the deeper layers. The pustular syphilide is always superimposed on a papule, while the vesicle of varicella is surrounded by normal skin. The lesions thus shortly described are the commoner of those associated with early generalized syphilis.

I will now refer very briefly to the cutaneous lesions of the later stage of the disease. Tertiary eruptions are usually localized, with considerable infiltration of the skin and subcutaneous tissues; they are entirely lacking in symmetry of distribution, tend to break down and form ulcers, and usually leave well marked scars; they have little tendency to spontaneous cure. There are two common late lesions that must be recognized; the *nodular syphilide* and the *gummatous syphilide*.

The nodular syphilide consists of one or more nodules of the familiar ham colour; they tend to assume a circular arrangement; they may be covered with scales; commonly, they break down and form ulcers of a serpiginous type; they are oftenest seen on the face especially the nose. They must be distinguished carefully from *lupus vulgaris*; the latter disease is comparatively slow in onset, while the nodular syphilide may be developed in a few weeks. The gummatous syphilide is a lesion caused by infiltration of the skin with connective tissue cells, as a reaction to the luetic infection.

The greatest reaction takes place about the blood vessels and in time the blood vessels may be shut off by the cellular infiltration; this will cause necrosis of the tissues above, served by these vessels and result in the breaking down of the gumma, an ulcer being formed. This ulcer is characterized by a sharply punched out edge, steep sides, and a wash leather base; the lesion is discrete, has no tendency to spread or coalesce with adjoining lesions, and the surrounding skin shows no evidence of inflammatory reaction.

McDonagh explains the pathology of the formation of this lesion by assuming the circulation of the skin to be analogous to that of the liver, whereby definite areas, about the size of a shilling, are served by a central artery, with radiating branches, the venous return being accomplished by circumferential veins; each area of skin thus nourished becomes practically a unit. Thus, if this area becomes the site of cellular infiltration, a gumma will be formed, limited in extent and definite in outline; should the central blood vessel become occluded by pressure of the surrounding connective tissue, an ulcer will result, also limited in extent, sharply outlined, and having no tendency to spread to the adjacent tissues, or coalesce with another gumma, however near. Gummata may occur anywhere. The scar left by a gumma is usually covered by a very thin tissue-paper like pellicle, which wrinkles when picked up between the fingers, and is of straw colour.

The above are the common skin lesions of syphilis; no mention has been made of the lesions affecting the mucous membranes of the mouth, as this subject will be taken up in a later paper by another member of the staff of this unit.

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THE TEACHING OF HYGIENE

BY A. H. MACKAY, LL.D.

Superintendent of Education for Nova Scotia

IN the elementary (or common school) grades, hygiene should be taught continuously from grade I to grade VIII, adapted by the teacher to the age of the pupils, laying emphasis, with attention-fixing illustrations, on the importance of health for the future enjoyment as well as usefulness of life. As sex-hygiene cannot be expected to be dealt with physiologically with good effect by even a small minority of our best elementary teachers, the Christian moral viewpoint should be stressed as the consensus of the experience of the best men and women of all ages and of all happy parts of the world. The text-books prescribed for the elementary grades form a very good basis of hygiene doctrine which should be presented to the pupils with demonstrations and illustrations adapted to affect their emotions, impress their memories, and develop resolutions. With this instruction, appropriate physical exercises, and medical inspection of the schools and the pupils, should be regularly carried on; and card records of the physical development of each pupil should be filled in at least once a year, and accompany the pupil from grade to grade.

In the high school grades the same general plan should be carried on in all detail. But in addition, it is very desirable that a course of elementary anatomy, physiology and hygiene should be given for at least one year, utilizing when possible, any aids from the biological course—botany and zoology. In many high schools with tactful teachers, depending somewhat on local conditions, scientific truths could be emphasized at this stage, which could not be effectively attempted in the common school grades.

As good health is the most fundamental basis of personal efficiency, hygiene is the first thing which should engage our attention in the public school programme. Then as a second should come the vocational subjects, to prepare the pupils for earning a living. Then thirdly, the avocational subjects, to enable them to use their

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leisure properly, with enjoyment to themselves and benefit to society in general.

This threefold grouping does not exclude the full culture of the soul; but for this we must have under present conditions the coöperation of specialists in our various religions—in the church if not in the school.

To carry out this part of the school programme effectively, it is necessary to have the teachers well trained in the biology of man, at least in the high school for teachers of the more elementary schools, and in the universities or medical colleges for the more advanced schools. This scientific knowledge should be revised in the teacher's training schools while methods of presenting the instruction to pupils so as to interest, impress and control them, is being developed.

In the great majority of schools, the teacher must be able not only to influence the pupils, but the school boards, and the parents. To do this the teacher must be well posted not only in the subject of hygiene, but in the correlative knowledge necessary to show the advantages of such instruction; and also to outline the regulations to be enforced.

The teacher should be acquainted with the statistics of the medical inspection of schools, to be able to prove what such an inspection would accomplish beyond leaving the care of the young entirely to the tender but unenlightened mercies of the majority of parents, and to their physicians who are generally only called in when some member of the family is supposed to be seriously ill.

Children in nearly every family grow up under disabilities which are assumed to be the inevitable and common lot of all, just because they were not examined for defects or malformations which could have been readily eliminated with often enormous advantage to their power, comfort and life-work. In rural schools the importance of inspection is even greater than in the towns and cities where a doctor is near at hand and the expense of medical family visitation, comparatively, is not great.

I would therefore emphasize the importance of good courses on hygiene in high schools and universities for all teachers, as well as in the normal training schools. In universities and medical colleges I would recommend special courses bearing on public sanitation and hygiene. And in addition there should be psychological courses preparing medical men for the classification of school children and others according to mentality. This is absolutely necessary when we have to make provision for the segregation, and education when

possible, of the various classes of feeble-minded—the imbecile, the moron, the retarded, the abnormal. This would involve a training in the application of such tests of mentality as the Binet, the Binet-Simon, and other modifications of such testing systems.

We have in every province of Canada provided for the education of the normal child, the segregation and care of the blind, the deaf, the harmless insane, the dangerous insane, and a class of the incorrigible. But we have not yet in most places begun to provide properly for the segregation and care of the imbecile, of the ordinary feeble-minded, and of those whose lack of self control make them a source of danger to society; or even to provide desirable schools for slow pupils who may develop into very useful members of society.

To authoritatively classify such pupils, specially trained experts will be required; and we must look for them mainly from our medical and higher scientific university courses. In fact our governments can hardly be expected to provide the institutional equipment until authoritative classification experts can be found.

I feel that this is a very feeble contribution to the symposium on a complete system of hygiene teaching—physical hygiene, mental hygiene, social hygiene.

I regret my inability to be present to enjoy the advantage of the other addresses on the subject and the discussions arising from them.

Case Reports

RUPTURED ECTOPIC—BLOOD TRANSFUSION AND PULMONARY EMBOLISM

By R. V. B. SHIER, M.D.

Cookstown, Ont.

ON October 10th, last, I was summoned to see a woman some miles out in the country. I found her in a serious condition presenting the signs of abdominal hæmorrhage. The history and patient's condition quickly led to a diagnosis of ruptured ectopic pregnancy. Dr. Little and Dr. Lewis, of Barrie, were called in consultation, and while waiting for their arrival the nurse and myself transformed the kitchen into an operating room and gave our patient saline interstitially. We placed her on the table at 1.30 a.m., just six hours after onset of symptoms. She was pulseless, her pupils dilated and altogether not at all encouraging.

The abdomen was quickly opened and found full of blood and clots. The ruptured tube was easily located, its pedicle clamped and tied off. Pituitrin 1 c.c. was now given. The abdomen was made reasonably free of blood and clots and the incision closed, drainage being provided by two rubber tubes passing down to the pelvis. The patient was returned to bed with the foot elevated.

About two hours later, as soon as was possible, I transfused her from her husband. He was a healthy, robust man. About 750 c.c. of blood was used. Sodium citrate method followed. The usual signs of improvement after transfusion followed, and from then on the patient made an uninterrupted recovery. The incision healed by first intention and by the eighth day she had a good appetite, a normal temperature, and a pulse of 96.

Her improvement continued until the morning of the twelfth day, when suddenly, while in conversation with the nurse, she was seized with a fainting spell and gasped for air. Collapse followed immediately, the pulse dropped to 70 and was very weak. I was called and found her cyanotic and suffering from dyspnœa. She had no pain but her pulse was now 140. I suspected pulmonary

embolism and gave stimulants and fresh air in abundance. In a few hours time the cyanosis lessened, but the pulse remained fast and the dyspnoea increased. The respiratory rate reached 58 to 60 at times. The air hunger was extreme. By this time one could notice marked diminished expansion on the left lung, base being practically immobile. Her condition remained much the same for thirty-two hours when death came through gradual cardiac failure.

The case is interesting for the following reasons.

1. The difficulties under which we operated, considering the home surroundings and the patient's condition.
2. The advantage of blood transfusion either before or after operation.
3. The rare opportunity of watching a case of pulmonary embolism, the extreme dyspnoea being the outstanding feature.

THE distribution, free of charge, of antitoxin for the treatment of diphtheria helped to bring the death rate down to 6.6 per thousand during the month of March. According to the statement issued by the Ontario provincial board of health this distribution cost \$2,227.80. There were twenty-three deaths out of 347 cases. In Windsor, the centre of the epidemic, there were fifty-eight carrier cases and thirty-four clinic cases, as compared to twenty-six carrier and sixteen clinic cases in March, 1916.

Editorial

THE INVALIDED SOLDIERS' COMMISSION AND THE NEW DEPARTMENT OF SOLDIERS REESTABLISHMENT

THE Right Honourable the Prime Minister in a memorandum called the attention of His Excellency the Governor General in Council to the relative powers, responsibilities and duties of the Department of Militia and Defence and the Military Hospitals Commission in the care and treatment of invalided soldiers, stating that the arrangements provided had not proved useful or indeed practicable. It was also represented that a certain point of time should be fixed when the duties of the Department of Militia and Defence ceased and those of the Military Hospitals Commission commenced. Arrangements were then made, with the approval of the Minister of Militia and Defence and the President of the Military Hospitals Commission, whereby all invalided soldiers who required medical treatment should be taken care of in institutions administered and controlled under the direction of the Minister of Militia and Defence with the exception of those who continued to require treatment on account of suffering from tuberculosis, epilepsy, paralysis, or other diseases likely to be of long duration or incurable and requiring institutional treatment or on account of being mentally deficient or insane.

Soldiers who have ceased to require further treatment shall be struck off the strength or discharged and soldiers so struck off the strength or discharged shall thereafter, under certain conditions, be entitled to the facilities for education or permanent treatment or care.

Such soldiers shall pass under the care of the Military

Hospitals Commission which Commission shall hereafter be known as the Invalided Soldiers' Commission.

A new department has been established known as the Department of Soldiers Reestablishment. presided over by a Minister, the duties of the said Minister extending to and including the following:

(a) The providing of hospitals, convalescent homes and sanatoria, whether permanent or temporary, for the care or treatment of invalid officers, non-commissioned officers, men or other members of the Canadian Expeditionary Force who have been honourably discharged therefrom, and the administration, control and direction of all such hospitals, convalescent homes and sanatoria, whether heretofore established or to be established.

(b) The vocational, educational and other requisite training for civil occupation of all persons who have served in, and who have been honourably discharged from the Canadian Expeditionary Force;

(c) The provision of employment, and all such assistance therein as may be requisite or advisable for the persons aforesaid, and generally for their rehabilitation in civil life and activities;

(d) All matters relating to pensions for the persons aforesaid;

Provided that nothing herein shall interfere with, or affect, the powers or authority of the Board of Pension Commissioners.

Provision shall be made so that the Military Hospitals Commission may continue to carry on educational and vocational training in the military institutions for the care and treatment of officers and soldiers of the Canadian Expeditionary Force before they are struck off the strength or discharged, and facilities shall be furnished by the officers in charge of such institutions for the effective and continuous carrying on of such training by instructors appointed by the Military Hospitals Commission and under its control (such

training to be subject to the direction of the medical officer in charge of the institution), and for the installation and maintenance in such institutions of such apparatus as may be necessary therefor.

The Military Hospitals Commission shall continue to provide such artificial limbs, orthopædic boots and appliances as may be required, and, upon requisition by the medical officer charged with the treatment of any officer or soldier, shall furnish such artificial limbs, orthopædic boots and appliances as may be necessary.

The Military Hospitals Commission shall provide such premises and accommodation as are necessary from time to time adequately to care for officers and soldiers struck off the strength or discharged for whom treatment is desirable or necessary by reason of their suffering from tuberculosis, epilepsy, paralysis, or other diseases likely to be of long duration or incurable, or by reason of their being mentally deficient or insane.

The Military Hospitals Commission shall also provide to the extent, and in the manner from time to time determined by the Governor-in-Council for the medical care and treatment of men formerly officers and soldiers who having been struck off the strength or discharged, as not requiring further treatment, nevertheless subsequently require such treatment by reason of disabilities due to or aggravated by service.

The following Institutions pass under the direction of the Department of Militia and Defence and the Military Hospitals Commission respectively:

INSTITUTIONS AND PARTS OF INSTITUTIONS TO BE TAKEN OVER GENERALLY BY THE MILITIA DEPARTMENT

1 Hospital Trains

Military District No. 1

Name of Institution	Beds.
2 Military Convalescent Hospital, London.....	108

Military District No. 2

3	Spadina Convalescent Hospital.....	227
4	College Street Convalescent Hospital.....	126
5	Oakville Convalescent Home, St. Catharines.....	25
6	Military Orthopædic Hospital.....	440
7	Victoria Convalescent Hospital, Hamilton.....	20
8	Dunedin Convalescent Hospital, Hamilton.....	9
9	Brant House, Convalescent Hospital, Burlington.....	242
10	National Cash Register Building.....	600
11	Officers' Convalescent Hospital, Toronto.....	18

Military District No. 3

12	Queen's Military Convalescent Hospital.....	380
13	Fleming Convalescent Home, Ottawa.....	82
14	Ontario Military Convalescent Hospital, Cobourg.....	152
15	Elmhurst Convalescent Hospital, Kingston.....	46

Military District No. 4

16	Drummond Convalescent Home, Montreal.....	171
17	Grey Nun's Convalescent Home.....	285
18	Khaki League Home.....	50
19	St. Anne's Military Hospital.....	

Military District No. 5

20	Savard Park Convalescent Hospital, Quebec.....	114
21	Discharge Depot (Old Immigration Buildings).....	

Military District No. 6

22	Camp Hill Convalescent Hospital.....	300
23	Pine Hill Convalescent Home.....	123
24	Military Hospital, Pier 2.....	475
25	Ross Convalescent, Sydney.....	31
26	Moxon Convalescent Home, Sydney.....	79
27	New Military Hospital, Charlottetown.....	200

Military District No. 7

28	Armouries Military Convalescent Home, St. John.....	231
29	Military Hospital, Fredericton.....	
30	Discharge Depot.....	

Military District No. 10

31	Manitoba Military Convalescent Hospital, (except the Machinery Hall, Horticulture Building, Farm and Farm Buildings.).....	534
32	Deer Lodge Convalescent Home.....	48
33	Keefer Convalescent Home, Port Arthur.....	22
34	I.O.D.E. Hospital, Winnipeg.....	60
35	Receiving Depot, Winnipeg.....	23

Military District No. 11

36	Esquimalt, Convalescent Hospital.....	110
37	Resthaven Convalescent Home.....	131
38	Qualicum Convalescent Home.....	150
39	Fairmount Convalescent Home.....	140
40	Vancouver General Hospital (1).....	300
41	Shaughnessy Convalescent Home.....	203
42	Vernon Convalescent Hospital.....	36
43	Columbia Hospital Annex, New Westminster.....	200

Military District No. 12

44	St. Chad's Military Convalescent Hospital.....	52
45	Moose Jaw Military Convalescent Hospital (1).....	241

Military District No. 13

46	Ogden Military Convalescent Hospital, Calgary.....	179
47	Edmonton Military Convalescent Hospital (to become an educational institution and transferred back to the M.H.C. upon the completion of the proposed extension to the Strathcona Military Hospital).....	180
48	Strathcona Military Hospital.....	156
49	Calgary Convalescent Hospital.....	64
50	Wetaskiwin Convalescent Home.....	50
51	Discharge Depot.....	

**INSTITUTIONS AND PARTS OF INSTITUTIONS TO BE
RETAINED BY MILITARY HOSPITALS COMMISSION**

Military District No. 1

	Name of Establishment	Beds
1	Byron Sanatorium.....	90
2	Freeport Sanatorium.....	32
3	Military Convalescent Hospital, Guelph (1).....	726

Military District No. 2

4	Euclid Hall, Toronto, for incurables.....	31
5	Muskoka Free Sanatorium.....	61
6	Mountain Sanatorium, Hamilton.....	144
7	Newmarket Hospital for Insane.....	150
8	Whitby Convalescent Hospital.....	648

Military District No. 3

9	Mowat Memorial Sanatorium, Kingston.....	141
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Military District No. 4

10	Laurentian Sanatorium.....	49
11	Laurentian Inn Sanatorium.....	67

Military District No. 5

12	Lake Edward Sanatorium.....	60
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Military District No. 6

13	School for Blind, Halifax.....	
14	Dalton Sanatorium, P. E. I.....	27
15	Kentville Sanatorium.....	154

Military District No. 7

16	Riverglade Sanatorium.....	40
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Military District No. 10

17	Ninette Sanatorium.....	99
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- 18 Machinery Hall, Horticulture Building, Farm and Farm
Buildings now part of the Military Convalescent
Hospital.....

Military District No. 11

- 19 Balfour Sanatorium..... 102
20 Tranquille Sanatorium, Kamloops..... 31

Military District No. 12

- 21 Earl Grey Sanatorium, Regina..... 67
22 Qu'Appelle Sanatorium..... 22
23 New Sanatorium, Prince Albert (1)..... 44
24 Emmanuel (New M.H.C.), Saskatoon..... 72
25 Saskatoon Convalescent Hospital..... 149

Military District No. 13

- 26 Frank Sanatorium..... 61
27 Mountain View Sanatorium..... 25

Any institution which may at any time be under the direction and control of the Military Hospitals Commission, or of the Minister of Militia and Defence may, with the approval of the Governor-in-Council, be transferred to the control and administration of the Minister of Militia and Defence, or of the Military Hospitals Commission as the case may be.

THE most Reverend Cosmo Gordon Lang, Archbishop of York, on his recent visit to Montreal gave a notable address to the Women's Canadian Club on the special problems he foresaw arising in Canada, as well as in England, both in the immediate and far-reaching future. He dwelt on the question of infant welfare and the absolute necessity that exists for conserving child life. In making mention of the nurses furnished by England for the British Expeditionary Force he said they had not only sent fifty-six hospitals to the French army, but had also supplied it with a complete corps of nurses and fifty canteens.

The Primate is a speaker of restrained force, of essential dignity, of unshaken resolution, and supremely solemn convictions. Prior to his Montreal visit he had delivered in the neighbouring Republic seventy-three addresses to audiences numbering approximately eighty thousand people.

His Grace is the eighty-fourth Archbishop of York, and represents, with distinction, an ancient historic line of unbroken succession.

AN able address was delivered in the Faculty of Education building, Toronto University, to a large and influential audience on March 22nd, by Dr. Winnifred Cullis, Professor of Physiology in the Royal Free Hospital School of Medicine, London, England. Dr. Cullis told the story of the pioneer woman doctor, Dr. Elizabeth Garrett Anderson, and told it well. After describing her early struggles and the difficulties she encountered in her endeavours to enter the medical profession, she told the tale of the splendid success of the college and hospital which Dr. Anderson founded, the New Hospital for Women, which began life as a dispensary. Last year as many as forty thousand women patients were given treatment in the dispensary of this hospital, and from three to four thousand in-patients cared for. Hundreds apply for treatment who have to be turned away. There is always a waiting list of women to enter the hospital as patients.

Dr. Elizabeth Garrett Anderson, since last Christmas, has passed away and, in England, a plan has been launched to endow fifty beds, each at a cost of £1,000, as a lasting memorial to the pioneer woman doctor's work. Already the women of the dramatic profession, the women artists, the great colleges, Newnham, Girton, Somerville and Lady Margaret, have volunteered to contribute their quota. The women of Australia have volunteered to do the same. Dr. Cullis in appealing to Canadian women said that the

New Hospital is empire-wide in its pioneer work; one woman actually came from the prairies all the way to England because she wanted to be treated in a woman's hospital. The whole empire of women owe a debt of gratitude to Dr. Garrett Anderson, and even more than the intrinsic value of the money was the spirit of Empire which such things engender.

One of the many fine remarks made by Dr. Cullis is specially worthy of note: "One of the greatest qualifications of women is that they rise enormously to responsibility, and when they fail it is nearly always for lack of opportunity."

A committee of representative women was appointed to take part in establishing the memorial to Dr. Elizabeth Garrett Anderson in the "New Hospital for Women", Euston Road, London, England.

The Montreal Women's Canadian Club has already sent \$100 to Dr. Cullis to start the fund.

THE thirteenth Annual Report of the Nova Scotia Sanatorium was tabled at the meeting of the House of Assembly. On September 30th, 1916, there were thirty-eight patients at the Sanatorium, and sixty-four were admitted during the year. Of these, twenty-nine remained at the end of the year. The total expenditure was \$39,382. The superintendent outlined the extension scheme which had been carried out and, including the tented colony, there were now one hundred and eighty military tuberculosis cases under treatment. The permanent buildings are four in number, hospital, two pavilions, vocational building, and new recreation hall. The vocational building will have appliances for teaching handicraft in leather, brass and wood. Instruction will be given in the management of motor cars, stenography, type writing and general education for men. The new infirmary, now in process of erection, will probably accommodate sixty-two in small groups of three or four on

a porch, with separate rooms for each patient. Here also will be the examining offices, the laboratories, operating room, nose and throat room, tuberculin room and x-ray room.

The medical superintendent of the Nova Scotia Sanatorium considers that the results since the year 1910 are such that the institution is an economic success, a good investment for the Province, as its fine group of buildings will eventually be handed over to the Nova Scotia Government for the use of the civil population. The extensions under way will provide accommodation for two hundred more patients during the coming year.

THE Rochester Medical Association entertained recently as guest of honour Captain E. Ryan, superintendent of Rockwood Hospital. Captain Ryan delivered a most thoughtful and inspiring address to the meeting. He particularly specialized the wonderful advancement in war surgery, more especially specially in wound treatment, stating that principles and theories held dear in bygone days have passed away. The antiseptic treatment has failed to produce results. Carbolic acid, bichloride, biniodide and the rest of the family are numbered with the slain. They are powerless to resist the terrible avalanche of pus that accompany war wounds. He alluded to the method of treatment of those eminent research workers, Carrol and Dakin, which is quite universally commended. Captain Ryan then took up the orthopædic side of war surgery and the development and advancement of curative workshops. Without presuming to give advice on the war problems confronting us, the speaker stated that he had seen hundreds of cases of shell shock, and he was of opinion that men of nervous temperament, who are most liable to be affected by this malady, should not be sent to the firing line. He considered the greatest possible care should be taken in excluding those exhibiting an unstable, psychic or neurotic temperament, and that men specially

experienced in this class of work should supervise the material for the armies going overseas. The heart, lungs, kidneys, etc., are all examined by men carefully trained in this work, and he had no hesitation in saying that men trained in psychosis or psychoneurosis should pass upon many of those called for enlistment. Experience had taught him that cases of war psychoneurosis should be discharged from the army and be permitted to return to civil life; their economic power is of far more benefit to the nation than their fighting power is to the army.

Captain Ryan is a brilliant and well-known Canadian physician, for many years Professor of Anatomy of Queen's University. He was sent abroad in March, 1917, with the Ontario Military Hospital. For a year he was actively engaged in medical work in England and saw thousands of wounded in the hospitals. Later on he was recalled to Canada and now he is connected with the Toronto M.O.D. unit, which is caring for medical and surgical cases sent back from England and France.

By Order-in-Council No. 432, under date February 21st, the Canadian Government created a department to administer the work in connexion with the reestablishment in civil life of those who have fought for Canada and the Empire in the present war. The name of the department is the "Department of Soldiers' Civil Reestablishment", which will be presided over by Sir James Lougheed, who has been appointed Minister of Soldiers' Civil Reestablishment. The duties and powers of the new minister will cover, (a) The provision of institutions for the care and treatment of invalided officers, non-commissioned officers and men of the Canadian Expeditionary Force who have been honourably discharged, and the administration, control and direction of all such institutions; (b) Vocational and Reeducational training of all such discharged men; (c) The provision of

such employment and assistance as may be requisite or advisable for such men; (d) All matters relating to pensions.

The Military Hospitals Commission with its staff is to be continued under the name of the Invalided Soldiers' Commission.

A NATIONAL committee for mental hygiene in Canada was organized at a meeting which took place in Toronto on February 26th, last, under the presidency of Dr. C. K. Clark. Mr. Clifford Beers, of New York, addressed the meeting, outlining the organization of the National Committee for Mental Hygiene in the United States. The sum of \$20,000 was subscribed as a guarantee of the work of the committee during the first three years. Among those present were Sir Robert Falconer, Major and Mrs. J. G. Fitzgerald, Dr. C. J. Hastings, Dr. Helen McMurchy, Drs. Peter Bruce and D. K. Russell, of Ottawa, Dr. O. C. J. Withrow, Dr. Gordon Bates, Dr. Gordon Howland, Dr. Horace L. Britton Dr. E. J. Pratt, and Professor Peter Sandiford, Mrs. Crerar and Mrs. A. M. Huestis. Dr. D. N. Hincks acted as secretary.

A COMMITTEE has been organized under the title of the "Halifax Home and Blind Relief Fund" for the relief of those who suffered in the Halifax explosion and particularly those who were blinded. The chairman of the committee is Sir William Fraser, the director of the Maritime School for the Blind. Mr. Havelock Sansom, the manager of the Tobique Lumber Company of Cambellton, the secretary-treasurer, is engaged in the preparation of lantern slides of Halifax and in collecting information for a series of lectures which it is proposed to give in Canada and the United States. Other members of the committee are Lady Fraser, Mrs. A. E. Smith of St. John, and Mrs. P. M. Fielding, of Windsor, Nova Scotia.

The Association

THE COMBINED MEETING AT HAMILTON PRELIMINARY PROGRAMME

THE Mayor, the city officials and the public generally, will welcome to our city, the visiting members of the medical profession and their friends in this great Congress Week. They trust their visit will be profitable from a scientific point of view and that their comfort and pleasure will encourage them to return at some future date, to learn something more of our beautiful city.

Nestling in the heart of the garden of Canada, Hamilton can boast of its favourable geographical location and beautiful surroundings. It is known far and wide as the Industrial City by reason of the fact that with a population of approximately 110,000 it operates nearly 500 industries.

Located on the shores of Hamilton Bay, a landlocked harbour at the head of Lake Ontario, it has outgrown its original boundaries to the south, east, and west and now extends well upon the height of land to the south, which the citizens are proud to call a mountain. Easterly it reaches into the richest fruit and produce garden of which Ontario boasts and westerly almost to the outskirts of the neighbouring town of Dundas.

Travel where you will, you will not find a more beautiful panoramic view than one gets from the brow of the Hamilton mountain, which rises to a height of about 300 feet. In the immediate foreground is the bustling city, rich in foliage at this season of the year; to the right is the Niagara fruit belt, to the left the beautiful Dundas valley and in the background the peaceful water of Hamilton Bay backed by the blue waters of Lake Ontario. Far in the distance, on a clear day, can be seen the outline of the big buildings in Toronto, something more than 40 miles away.

With electric railway lines running out in all directions and boat lines connecting with the north shore of the Bay, Toronto, Grimsby, Niagara and other points of interest, it is not surprising that Hamilton is rapidly becoming a tourist and convention city, as it has long been an industrial centre. Large enough to be

interesting it is still small enough to be sociable, and the stranger within its gates is assured of a hearty welcome and a good time.

At the head of the Bay the motorist drives along the crest of a sand bar formation known as Iroquois Beach, a relic of pre-glacial times. As one looks to the west the banks of a one-time great river are plainly seen and geologists tell us that at some spot not definitely located the waters from the north and south met and mingled. This geological secret has aroused the interest of the scientists of two hemispheres.

Hamilton and the surrounding country abound in spots of historic interest, foremost of which is the Stoney Creek battle-field, accessible by motor or electric car. The Dundurn Ridge is another spot that has found its place in history, while many interesting ruins of the early settlers' days are to be found at and about Ancaster, situated on the mountain brow about six miles distant from the centre of the city, and also to be reached by motor or electric car. Another electric line will take the sightseer to Burlington Beach, a narrow stretch of land that separates the Lake from the Bay and the popular summer resort of the citizens. A drive along the Toronto-Hamilton highway gives one an idea of the beauty of the surrounding country and the general prosperity of the whole district, while a visit to the city's fine parks is a delight to the lovers of nature.

THE SPIRIT OF COÖPERATION

One of the most striking and most gratifying features of the Medical Week is the whole hearted unanimity with which the various organizations have pledged their coöperation.

The numerous meetings of the General Committee on Arrangements have been attended by members representing the Canadian Medical Association, the Canadian Public Health Association, and the Health Officers' Association, many of whom have repeatedly travelled long distances to be present and share in the discussion of the necessary preparations.

The Committee is confident that this enthusiasm must pervade the whole meeting, and that the spirit of fraternal coöperation, so evident from the outset, will continue to animate the profession long after the Convention has become a memory.

In the preparation of the programme the utmost care has been exercised to assign to each body represented sufficient time for the discussion of subjects peculiarly its own, and to avoid the

duplication of papers or the repetition in any section, of subjects which may have been discussed in another.

The number of topics, the high standard of excellence of the papers to be presented, and the facilities afforded for thorough discussion should ensure a maximum attendance of the medical profession, and a permanent place for this Congress in the annals of Canadian Medicine.

APPEAL TO COUNTY SOCIETIES

For the first time in the history of the Ontario Medical Association, the County Medical Societies are this year afforded an opportunity of exercising a degree of influence commensurate with their importance. Under the new Constitution and By-laws of the Ontario Medical Association the County Society is recognized as the basic element of the Association.

The Committee of general purposes, as the legislative body of the Association, is composed of representatives elected from the County Societies in proportion to their membership. This plan has undergone the test of experience in the American Medical Association and reflects the growing spirit of democracy.

The Committee in charge hopes for a large representation of the profession outside the cities for this is necessary to prove and support the main idea underlying our new Constitution and By-laws.

SCIENTIFIC PROGRAMME

Monday and Tuesday

Canadian Public Health Association and Ontario Health Officers' Association

President's address (Canadian Public Health Association)—
"A plea and a plan"—W. H. Hattie, Halifax.

President's address (Ontario Health Officers' Association)—
H. W. Hill, London.

"The public health nurse"—J. A. Baudouin, Lachine.

Paper (title to be announced)—M. M. Seymour, Regina.

"Good public health service in small towns and rural municipalities"—J. J. Harper, Alliston.

"Hints on rural health administration"—J. W. S. McCullough, Toronto.

"The control of an outbreak of diphtheria"—W. C. Allison, Toronto.

"The trail of the medical vampire"—Frederick Paul.

"Health insurance"—Charles J. Hastings, Toronto.

"The venereal disease problem"—Gordon Bates, Toronto.

"Why is it worth while to establish sewerage in a small town?"—F. A. Dallyn, Toronto.

"Interpretation of water analysis"—H. M. Lancaster, Toronto.

"Mental hygiene"—Clarence M. Hincks, Toronto.

"Public health education"—Chas. F. Boldman, Toronto.

Child Welfare Section of Canadian Public Health Association—
(Tuesday morning).

Chairman's address—Alan Brown, Toronto.

"Progress in child welfare work in Europe"—Grace L. Meigs, Washington.

"The result of three years' work in the department of child hygiene"—Geo. Smith, Toronto.

"The medical student in his relation to infant and child welfare work"—Richard Bolt, Cleveland.

"The management of a child welfare week in small cities and towns with results"—Mary Power, Toronto.

Round table discussion and a subscription luncheon.

Wednesday, 9.00 a.m.

Canadian Association for the Prevention of Tuberculosis,

Addresses of welcome by the Mayor of Hamilton, Charles G. Barker; the President of the Ontario Medical Association, J. P. Morton; and others.

9.30 a.m.

Social and Public Health Aspects of Tuberculosis:

The Secretary's report—Geo. D. Porter, Toronto.

"Role of health officers in the control of tuberculosis"—H. W. Hill, London.

"President's address"—J. A. Machado, Esq., Ottawa.

"Heliotherapy by the Rollier method as applied to surgical tuberculosis" (with lantern views)—J. H. Pryor, Buffalo.

2.00 p.m.*Symposium on the Diagnosis and Treatment of Tuberculosis:*

"Differential diagnosis"—J. S. Pritchard, Battle Creek.

"Sanitarium treatment"—A. F. Miller, Provincial Sanatorium, Kentville.

"Artificial pneumothorax"—C. D. Parfitt, Gravenhurst.

"Tuberculin treatment"—J. H. Elliott, Toronto.

8.15 p.m.*Combined General Session of all Associations:*

President's address (Canadian Medical Association)—H. Beaumont Small, Ottawa.

Symposium on the Returned Soldier Problem:

"Psychogenetic conditions in soldiers, their ætiology and treatment"—Lieutenant-Colonel Colin Russel, C.A.M.C.

(Title to be announced)—Colonel I. H. Cameron, C.A.M.C.

(Title to be announced)—Lieutenant-Colonel Hadley Williams, C.A.M.C.

Thursday, 9.00 a.m.**Canadian Medical Association and Ontario Medical Association**

Meetings of Sections.

2.00 p.m.*General Sessions:*

The Address in Obstetrics.—"Methods and operations for reducing foetal mortality with special reference to newer methods of Cesarean Section"—Joseph DeLee, Chicago.

The Address in Pediatrics—"Asthma in infancy and childhood"—Isaac A. Abt, Chicago.

The Address in Medicine—"On the significance of heart murmurs found in the examination of candidates for military service"—Lewellys F. Barker, Baltimore.

7.30 p.m.*General Session:*

The Address on the Ear—"Equilibrium and vertigo with special reference to aviation"—Isaac H. Jones, Philadelphia.

Friday, 9.00 a.m.**Ontario Medical Association and Canadian Medical Association**

Meetings of Sections.

2.00 p.m.*General Sessions:**Symposium on Intra-Cranial Pressure:*

"Physiology"—J. J. R. Macleod, Cleveland.

"Medicine"—W. F. Hamilton, Montreal.

"Surgery"—A. E. Garrow, Montreal.

7.30 p.m.*General Sessions:*

The Address in Surgery.

"Cancer"—Chas. H. Mayo, Rochester.

"Medical impressions of the day"—Frank Billings, Chicago.

PROGRAMME OF SECTIONS**SECTION IN MEDICINE**

"Modern methods in diagnosis of nephritis"—W. G. Lyle, New York.

"A clinical study and treatment of bronchial asthma"—I. Chandler Walker, Boston.

"The prevention of war neuroses (shell shock)"—Thaddeus Hoyt Ames, New York.

"Pathology of pneumonia in military camps"—W. G. McCallum, Baltimore.

"Psychoanalytical subject"—Beatrice M. Hinkle, New York.
(Title to be announced)—Thomas McCrae, Philadelphia.

"Chorea"—Alan Brown, Toronto.

SECTION IN SURGERY

- "Surgery of colon"—E. McGuire, Buffalo.
"Radical operation for cancer of the breast"—D. Guthrie, Sayre, Pa.
"Fractures of the hip"—M. S. Henderson, Rochester.
"Carrel-Dakin treatment of wounds and paraffin wax treatment of burns"—William O'Neil Sherman, Pittsburg.
"The training of the surgeon"—Jasper Halpenny, Winnipeg.
"Observations on post-operative management of abdominal cases"—W. R. Thomson, Warsaw, N.Y.
(Title to be announced)—E. R. Secord, Brantford.

SECTION IN OBSTETRICS

- "Normal labour"—Irving W. Potter, Buffalo.
"Practical infant feeding for the general practitioner"—Douglas Arnold, Buffalo.
"The late repair of injuries due to labour"—W. H. Weir, Cleveland.
"The technique of operations for the repair of the perineum"—B. P. Watson, Toronto.
"Results of various measures in the treatment of cancer of the uterus"—F. A. Cleland, Toronto.
"The toxæmia of eclampsia"—K. C. McIlwraith, Toronto.
(Title to be announced)—F. A. L. Lockhart, Montreal.
(Title to be announced)—D. Evans, Montreal.

SECTION IN OPHTHALMOLOGY

- "Fundus Oculi of Birds"—Major Casey Wood, Chicago.
"Management of cases of Simple Glaucoma"—Walter Parker, Detroit.
"Focal infection of the eye with special reference to the intestinal tract. A proposed new method of treatment. Reports of cases"—J. G. Dwyer, New York.
(Title to be announced)—E. Blaauw, Buffalo.
(Title to be announced)—John Wheeler, New York.

THE SECTION IN LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY

- "Teaching of plastic surgery of the head and neck"—Joseph C. Beck, Chicago.

"The value of radium in the treatment of lesions of the eye, ear, nose and throat"—Gordon B. New, Rochester.

"Nasal accessory sinuses"—Robert R. Ridpath, Philadelphia.

"Protein-allergy of nose and throat with special reference to food and pollen proteins; résumé of three years work"—J. G. Dwyer, New York.

AN APPEAL FOR DISCUSSIONS

The Committee on Programme have pursued a policy as far as it was possible of bringing here our brethren to the south of us to give many of the papers, and are asking that the men on this side of the line supply the discussions. As is well known the usefulness and effectiveness of any paper no matter how excellent, is seriously impaired by the absence of critical discussion, the latter is really of more importance. Not only then from the standpoint of importance, but also from the spirit of courtesy and hospitality, the committee confidently hope that our members will volunteer cheerfully to assist in the programme, and show by their interest the appreciation we all feel of the presence of the men who have come (many at great personal inconvenience) to help make this a record meeting.

Synopses of papers will be sent to those making application.

Saturday

THE HAMILTON CLINICAL DAY

Dr. Charles Mayo, of the Mayo Clinic, Rochester, and Dr. Frank Billings, of Chicago, will conduct a combined Medical and Surgical Clinic on the following types of cases:

- (a) Goitre—exophthalmic, simple and toxic.
- (b) Anæmias.
- (c) Focal infections.

Members having interesting cases on any of these types are invited to report them to the executive of the Hamilton Medical Society.

THE ROUND TABLE

On Thursday at 9. p.m. after the regular programme, there will be held a "Round Table Discussion" on a subject of vital interest to the profession. All seats will be reserved. The officers of each Association and of each County Society will be given an allotment

of the available accommodation. Chairs not applied for before Thursday morning will be thrown open to the general membership.

It is expected that in an informal manner, an opportunity will be given for the introduction of various shades of opinion on the underlying principles which govern our practice, our relations and duties to the general public.

THE ONTARIO LÆNNEC SOCIETY

The Ontario Lænnec Society will hold its meeting on Tuesday afternoon and evening, May 28th, beginning at 2 o'clock. Complete arrangements will be announced later.

BUSINESS PROGRAMME

Monday and Tuesday

The Business Sessions and Executive Meetings of the Ontario Health Officers Association and the Canadian Public Health Association will be arranged for by each Association later.

Tuesday Evening, 8.30 p.m.

Ontario Medical Association.

Meeting of the Committee of General Purposes.

Wednesday Morning, 9.00 a.m.

Ontario Medical Association. Business Session.

10 a.m.

Canadian Medical Association. Business Session.

Wednesday Afternoon, 4 p.m.

Canadian Association for the Prevention of Tuberculosis.
Election of Officers.

Thursday Afternoon, 4.30 p.m.

Ontario Medical Association. Business Session.

Friday Afternoon, 4 p.m.

Canadian Medical Association. Business Session.
Report of Special Committee on Resolutions.

SCIENTIFIC EXHIBITS

The attention of members of the various Associations taking part is drawn to the fact that there will be a most interesting collection of Scientific Exhibits. There will be a pathological exhibit of museum specimens in the personal charge of Dr. Maude E. Abbott of Montreal. This will include among special features a large exhibit of specimens from the National War Museum of Canada, shown by permission of Surgeon-General Fotheringham; an exhibit from the Babies' Hospital, New York, showing a number of specimens illustrating pneumonia in children; from the McGill Museum, the London Museum; and others. It will also include pathological material illustrative of papers being read in the various Sections. Members are cordially invited to send material illustrating their papers, or other specimens the exhibition of which would be of interest to any of the Associations participating in this Congress, addressed to the Committee on Scientific Exhibits, Canadian Medical Week in Hamilton, Royal Connaught Hotel, Hamilton. Express transportation charges will be paid on delivery by the Local Committee, and all parcels should be in the hands of the Committee not later than May 25th. Cards or labels giving full details about each specimen should be attached. All communications upon material for exhibition and inquiries about packing and shipment may be addressed to Dr. W. R. Jaffrey, 46 Hughson Street, S., Hamilton.

There will be a series of demonstrations of clinical laboratory procedures of special interest to the general profession, such as public health diagnostic tests; syphilis bacteriology, pathology and serology; alveolar air; kidney pathology and function; blood grouping and transfusions, technique; frozen section technique for surgical pathology and other procedures.

Moving pictures on medical and surgical subjects will be shown daily, between 4 and 6 p.m., in a convenient lecture hall. The subjects of these films will be such as to interest particularly the general practitioner and will deal more especially with the surgical aspects of conditions resulting from the war.

An exhibit of x-ray plates will be shown in a large room set aside for the purpose and equipped with efficient illuminating boxes. A good projection lantern is provided for the demonstration of lantern slide reductions from the plates. Invitations are being sent out to the men throughout the country, doing x-ray work, asking them to send any plates of unusual interest,

which will be placed on display. An informal demonstration of this kind will be made daily. A number of plates illustrating papers being read in the various sections will be on exhibition in this room. There will be an exhibit of some of the newer apparatus developed during the past year for the use of the American army at the front, in the way of portable field apparatus and instruments for precise localization of foreign bodies.

A number of posters illustrating the work carried on by the Canadian Association for the Prevention of Tuberculosis will be shown.

There will be a display of the charts, illustrations and literature from the Propaganda Department of the American Medical Association. In connexion with this there will also be a continuous lantern demonstration of slides illustrating the work carried on by this Association.

All material illustrative of papers being presented in the various sections, or in the general meetings, will be placed on exhibition and withdrawn for use during the reading and discussion of the papers.

In connexion with the Returned Soldier Problem, a number of the methods illustrating the reëducation of the returned men will be demonstrated.

SPECIAL ENTERTAINMENT

At this large Congress of Canadian Medical Associations the main consideration will be the presentation of the Scientific Programme. The Local Committee wish to announce that with due respect for war conditions, the usual banquet will not be held this year.

In place of this, four informal table d'hôte dinners will, on Monday, Tuesday, Thursday and Friday, be served in the large Assembly Hall at 6.30 p.m. Immediately following each dinner, the "Address of the evening" will be given.

On Wednesday afternoon the members have been invited to proceed to the Mountain Sanatorium where high tea will be served. Ample opportunity will be given to inspect the buildings, plant and grounds at this institution.

On Friday evening a smoking concert will follow the scientific programme.

On Saturday at 1. p.m. at the close of the clinic at the hotel, the members will be taken by motor to the new Hospital on the

Mountain, where through the courtesy of the Board of Governors of the city hospitals they will be entertained at luncheon.

"It has been suggested that the Thursday dinner be especially assigned to Class Re-Unions and Sectional Dinners. Those who are interested in either should correspond with the Local Committee without delay. Accommodation can be had for a few in private dining-rooms. It will be necessary to arrange for others by assigning tables in the large Assembly Hall. The Sub-Committee on Entertainment would like to hear from any who would agree to assist in the organization of a Convention Choir. Those who are in the habit of assisting in such choral work or any who may desire to help, should communicate with Dr. E. F. McLoughlin, 452 Main St. E., Hamilton, without delay, who will supply them with song sheet and other details. Members who know of any who should be invited to assist by contributing instrumental music will please coöperate."

HOTELS

The headquarters for the Canadian Medical Week are in the Royal Connaught Hotel which has placed ample accommodation at our disposal for the meeting. Rates in this hotel run from \$1.50 to \$3.50 per day.

The following hotels are in close proximity to the headquarters:

Wentworth Arms, Hughson St., cor. Main St., \$1.50 to \$3.50 (European).

Stroud, cor. McNab and Merrick Sts., \$2.50 to \$3.50 (American).

King George, cor. McNab and Market Sts., \$1.00 up (European).

New Commercial, 51 York St., \$1.25 to \$3.00 (European).

Hanrahan, 92 Barton St. E., \$2.00 (American).

Terminal Hotel, King St. E. \$2.50 (American).

The rates quoted in each case are on the assumption that the rooms are used to the full capacity.

We have been assured that there will be no difficulty in billeting all our guests.

RAILWAY RATES

In the last issue of the Journal we published a statement to the effect that the usual reduced rates had been granted by the railways. This concession has since been withdrawn by the railways at the request of the Canadian Railway Association for National Defence. While this will no doubt be a disappointment to many of our members, it is to be hoped that it will not have any serious effect upon the number attending the meeting.

AUTOMOBILES

For the assistance of those who take advantage of the motoring facilities it may be stated that garage accommodation will be ample and the rates reasonable.

GARAGES

Jolley Sales Garage, Catharine St. South.
Ford Motor Co., John St. North.
Overland Sales Co., John St. North.
Citizens Taxi Co., King St. East.
O. & R. Garage, Hughson St. South.
East End Garage, King St. East.

At its recent meeting the Council on Scientific Assembly arranged for meetings of the Section on Miscellaneous Topics, the subject to be taken up being the reëducation and rehabilitation of the disabled soldier. Major Frank Billings, head of this division in the Surgeon-General's office, has accepted the chairmanship of the section.

There will be five days of clinics in connexion with the Convention beginning Thursday of the preceding week and continuing up to Tuesday of the Convention week. These clinics will be under the auspices of the Association and will be conducted by best clinicians.

The personnel of the Executive Committee is as follows: Ludvig Hektoen, chairman; C. J. Whalen, secretary; W. A. Pusey, treasurer; J. V. Fowler, H. T. Patrick, M. L. Harris, Frank Billings, J. B. Herrick, C. E. Humiston.

Obituary

DR. PETER CONROY

DR. PETER CONROY, M.D., one of the most widely known and universally beloved physicians in the province, died at Charlottetown, P.E.I., March 14th. Dr. Conroy was ill but a short time and succumbed to an acute attack of pneumonia following a cold, contracted while visiting an out of town patient. A strong feeling of personal loss came to many hearts and homes when the sad news was announced. Two physicians were called in at an early stage of his illness, and, as the disease progressed, practically all the local physicians were in attendance almost every hour of the day, but medical skill proved unavailing and the spirit of this splendid man was called to higher service.

Dr. Conroy was born at Tignish, on March 20th, 1854. He was a son of Nicholas Conroy, M.L.A., who ably represented the Tignish district for a number of years in the local legislature. Dr. Conroy secured his education at Prince of Wales College, St. Dunstan University and Laval University, graduating from the latter institution as a doctor of medicine in June, 1864. He began practice in Charlottetown in 1878. He married Miss Emma Newbery, daughter of John Fenton Newbery, and leaves a family of three sons, two of whom are at the front serving with the 2nd Heavy Battery, formerly commanded by Major J. Webb Stanley. His sister, Miss Margaret Conroy, formerly a matron of the Dalton Sanatorium, now fills the position of nursing specialist in Boston.

The late Dr. Conroy was Dominion quarantine officer; he was a director of the Charles Dalton Silver Fox Company; a trustee of Falconwood Provincial Hospital, in which he took a keen interest rendering valuable services to its administration; he was chief house physician of the Charlottetown Hospital; a member of the Board of Governors of St. Dunstan University; and president of the Children's Aid Society. His death is a distinct loss to the civic, professional, and social life of his native province. Unselfish, kind, companionable and genial, he filled an enduring place in the hearts of all who were privileged to know him.

DR. A. E. HANNA

DR. A. E. HANNA, M.P., passed away just after being elected a member of the House. Reference to his death was made by the Prime Minister and the Leader of the Opposition before the session was suspended. Dr. Hanna had been member for South Lanark for several years. Though he had had but a brief parliamentary career, Sir Robert Borden said all those who were associated with him could bear witness to his strong devotion to duty, his intelligent grasp of public questions, and his desire to fulfill worthily the responsibility resting upon him as a member of the House. He was confident all would join in extending to his family very deep sympathy in the bereavement and loss which they had sustained.

Sir Wilfred Laurier followed with remarks full of appreciation. He referred to Dr. Hanna's useful membership and honourable citizenship, and joined the House in extending its condolence to the family.

DR. ALEXANDER FRASER

THE death of Dr. Alexander Fraser, in the sixty-second year of his age, occurred at Pasadena, California, on March 6th. Dr. Fraser was born at Port Bruce in 1856. He was a graduate of McGill University. He lived for some five years in Manitowac. He practised in Embro for two years. In 1912 he moved to Pasadena. Dr. Fraser was a man of sterling character, highly esteemed by all who knew him.

DR. OSWALD MEREDITH JONES

DR. OSWALD MEREDITH JONES, one of the most eminent surgeons of the North American continent, closed a life of supreme usefulness in the Jubilee Hospital, Victoria, B.C., after a comparatively short illness. Death was directly due to pneumonia.

The members of the Victoria Medical Society held a meeting on April 5th, to put on record the irreparable loss they felt, not only the Province but the whole Dominion had sustained. No citizen of British Columbia ever achieved a higher degree of public service, or filled a more useful life. The medical profession had lost more than a brilliant surgeon, they had parted with a personal friend; of his strength and skill he gave unsparingly to all. Dr.

Jones was born fifty-nine years ago in Carnarvon, Wales. He began his medical training in the London Hospital; he passed into the navy and it was in his first commission, on H.M.S. *War-spire*, that he came to Victoria about twenty-eight years ago. In this city he began his civilian practice and his reputation as a skilled surgeon soon spread up and down the coast. Dr. Jones was a Fellow of the Royal College of Surgeons, a Fellow of the American College of Surgeons and one of the charter members at the time of the inception of this organization, and a member of the British Medical Association. He was on the board of examiners for the Dominion of Canada, and also for the Province of British Columbia. He has read notable papers before the Canadian Medical Association.

Dr. Jones married a daughter of Mr. Brady, the well-known mining engineer of Kootenay. He leaves a widow and five children. One of his sons is now in France having gone overseas with the Army Medical Corps. On account of physical disability Dr. Jones was unable to serve at the front, but he nobly did his part when the wounded returned. In this service he exhausted his narrow margin of vitality and to his unceasing devotion to duty is due his untimely death. His great surgical ability was called into special demand; in addition to his regular practice he attended hundreds of cases of wounded men who returned in ever increasing numbers. Scores of cripples, who were so battered by war that they could only creep about on crutches, have been, through his skill, restored and literally "made whole". During the last few days of his life touching instances occurred of the unbounded gratitude and confidence he always inspired. Some of his soldier-patients refused to have surgical attention from any other physician, willingly enduring racking pain in the hope that he would soon be able to return to them. Many a war-torn soldier stands whole to-day a living monument to the devoted and generous part Dr. Jones did in the great war. Modest, unassuming, courageous, he shirked no duty nor failed in any emergency.

DR. SAREM M. ELLISON died suddenly on March 26th. He was for many years a prominent physician of New York city. Dr. Ellison was born and educated in St. Thomas, Ontario, and up to the time of his death periodically visited his native city. He was a graduate of McGill University.

DR. C. ECKEL^d died at St. Thomas, March 16th, after a long illness. Dr. Eckel lived in Brantford where he enjoyed a fine practice until he was stricken about a year ago.

DR. W. J. G. DAWSON, superintendent of the State Hospital in Eldridge, died in California recently at the age of seventy.

THE death of Dr. Armstrong removes a public spirited man who held the esteem and good will of every one. Dr. Armstrong was born in Bayfield, Ontario, educated at Goderich High School, and afterwards at Toronto University. He died at Tara on March 12th.

THE death of Dr. Francois Xavier Valade, of Ottawa, removes a well-known landmark of half a century. He was born in Terrebbonne and at the age of nineteen he graduated in medicine from Laval University. Coming to Ottawa to practise medicine fifty-one years ago he is identified with that city's early history. He was a member of the original board of the Water Street Hospital and had much to do with its progress and growth. He was the attending physician of many institutions, the homes for the aged, the Grey Nuns, the convent of the Precious Blood, and others. He was instrumental in the formation of the Institut Canadien, a former president of St. Jean Baptiste Society, and also a member of L'Union St. Joseph.

DR. T. V. HUTCHISON, for twenty-five years medical health officer for London, Ontario, died at his residence in Toronto on March 28th.

Miscellany

News

MARITIME PROVINCES

A SPECIAL meeting in Halifax of the city Board of Health was called to discuss precautions taken against smallpox. The chairman, Dr. McKay, said the main object of the meeting was to consider the advisability of vaccination, and consideration of the conscientious clause. It was urged that the reconstruction workmen should be vaccinated, and the repairs be hastened on the smallpox hospital especially required for the workmen. From four applications for the dual position of superintendent-matron, Mr. and Mrs. McKillop were accepted in view of their previous experience in hospital work.

A HOSPITAL is to be built in Halifax for the American Red Cross, or for soldiers and sailors of the United States who may become ill in the port or be brought to Halifax needing treatment. The site will adjoin the Nova Scotia Hospital.

FIVE cases of smallpox were reported in Sydney in March. At a recent meeting of the National Council of Women a resolution was passed endorsing the Government Bill on Venereal Diseases now before the legislature. Plans were also in formation to hold a "Child Welfare Day".

ON March 15th the Board of Health in the town of Glace Bay passed special regulations regarding the introduction of smallpox into the community. No persons residing in the adjacent towns can enter Glace Bay without a certificate signed by the health officers of said towns or from the municipality of Cape Breton County. Violators of the regulations will incur a fine not exceeding fifty dollars, or imprisonment in the county jail for a period not exceeding thirty days.

THE work of the St. John Ambulance Association proceeds

most satisfactorily. Dr. W. F. Roberts is the instructor and lately passed a large First Aid class. The examiners were Major L. M. Curren, Dr. F. L. Kenney and Captain Logie. Thirty-seven students presented themselves, and all succeeded in qualifying, many receiving high marks. Possessors of certificates in First Aid and Home Nursing were desirous of winning the Medallion of the association by passing a third class examination. Advantage was therefore taken of the very excellent and thorough instruction given by Dr. Roberts, with the result that nineteen young ladies will receive medallions from England. Sixteen members of the class will receive certificates of proficiency from Ottawa. The association feels that thanks are due to those who gave their valuable time and services to the instruction and examination of the classes.

ONTARIO

THE last monthly meeting of the Ottawa Dental Society was held at the Russell House. Major Magee spoke on the Canadian Army Dentist Corps, particularly dwelling on that branch of the work which looks after the oral condition of soldiers returned from active service. The following officers were elected for 1918-19: president, Dr. W. C. Macartney; vice-president, Dr. Sidney W. Bradley; secretary-treasurer, Dr. G. S. Richardson; executive committee, Dr. W. K. Greene, Dr. A. G. MacMillan, Dr. J. G. Coupal.

DR. ALFRED THOMPSON resigns his position as medical superintendent of the hospital of returned soldier invalids. The replacing of the Military Hospitals Commission by the Invalided Soldiers' Commission makes it impossible for Dr. Thompson, being member-elect for the Yukon, to remain at his post because of the Independence of Parliament Act. His resignation took effect on April 1st. Under the regime of Dr. Thompson the work of the Military Hospital Commission expanded from the care of about five hundred invalided soldiers until provision was made for 12,000.

DR. J. L. CHABOT, M.P. for Ottawa, has declined the office of Deputy-Speaker.

THE Victorian Order of Nurses will become affiliated with

the National Association of Nurses of Canada if the recommendation of the delegates is ratified by the Board of Governors.

Toronto hospitals are undergoing a considerable financial strain owing to the conditions enforced by the war. A consolidation of the city hospitals and their government under commission has been considered, but exceptionally well informed opinion seems to incline to the view that this plan, if carried out, would undoubtedly tend to check the flow of private philanthropy; they point out that all the advantages of the suggested consolidation, without its drawbacks, could be gained by forming a voluntary association of the hospitals of the city. In this way a standardized system of accounting would prove feasible, providing information enabling the expenses of management to be cut down. Centralized purchasing would result in very considerable economy. Centralized publicity, it is believed, would give larger donations.

A PROMINENT feature of the work of the Ontario Legislature this session has been the consideration of the bill to prevent venereal diseases. A special committee was appointed to the reading of the bill many members of which were medical men. It is expected that the Act will go into force about July 1st. That drastic legislation is universally desired for the prevention and compulsory treatment of venereal diseases is evidenced by the very large number of public meetings called in various parts of the Dominion to endorse the bill.

THE St. Thomas Medical Association waited upon the board of governors in control of Amasa Wood Hospital with the request that the institution should be taken out of the hands of the city council and placed under a trust and the accommodation increased. The doctors believed they could raise by public subscription the twenty or thirty thousand dollars needed.

THE annual meeting of the Hamilton Health Association showed good work accomplished during the year, in spite of the great difficulties created by war conditions. The directors' report outlined improvements undertaken at a cost of \$26,700, which was defrayed out of the \$47,450, raised by the campaign committee in May. The balance of this money, \$20,750, will be used for equipment for the new infirmary, and balance then owing

for the double cottage and new infirmary building. On the association's invitation the National Association for the Prevention of Tuberculosis will hold its annual convention in Hamilton in May, in common with four other medical societies.

QUEBEC

THE Montreal Presbyterian College has not only handed over its entire building to provide hospital accommodation for returned invalided soldiers, but also the David Morrice Convocation Hall. This means that the divinity students residing in the college must find quarters outside. The military authorities will take over the college on March 15th.

THE Advisory Council for Scientific and Industrial Research for Canada have sent a deputation to the United States to confer with American research bodies. Dr. Ruttan, of the chemistry department, McGill University, said that the celebrated mustard gas, which probably had much to do with the reverse at Cambrai, is being manufactured on a large scale comparatively in the States.

THE board of governors of Notre Dame Hospital intend to build a million dollar hospital; construction will probably be begun before the war is over. Archbishop Bruchesi made the announcement at the annual meeting of the hospital.

LIEUTENANT-COLONEL (DR.) LeBel gave an able address at Garde Champlain Hall, under the auspices of the St. Vincent de Paul Society. The speaker described the work being done at the Canadian Hospital at St. Cloud of which he was commandant. Of the thousands of wounded soldiers who are being treated there, only five per cent. of them succumbed to their injuries, a fact of the utmost significance, as only the most severe cases are admitted to this hospital.

DR. A. A. SHEPARD, school medical officer of Sault Ste. Marie, reported to the Public School Board lately on the number of cases of infectious diseases found in the schools in the months of January and February. The effect of the recent measles epidemic disclosed the fact that the days lost by exclusion amounted to 4,891 in the ten schools of the city. The situation was taken well in hand and the epidemic put well under control. Additional

safeguards were enforced prohibiting children under fifteen attending moving picture shows or Sunday schools. An additional precaution taken was the return home of children showing the early cough, so characteristic of measles, and the systematic reporting and placarding of houses.

MANITOBA

WITHIN the next year the Tuxedo hospital, a military institution, is to be extended to treble its present capacity. Plans are announced for the erection of a number of new buildings which will involve the expenditure of \$1,000,000. The hospital will accommodate 2,500 patients including those who are being re-educated under the vocational training scheme.

AN excellent report was made by the Grand Jury on the Brandon General Hospital and on the Hospital for the Insane. In the latter institution there are 647 patients. The staff numbers eighty-six. A good deal of the work of the hospital is done by the inmates; the women have knit a large number of socks for the Red Cross Society. The land connected with the hospital is finely stocked, and the farm showed a profit of \$8,000 for the year of 1917. The Grand Jury found the staff of the Brandon Hospital working under adverse circumstances and recommended that the Provincial Government take over all the hospitals, and erect and maintain one in this populous centre.

SASKATCHEWAN

THE Canadian Army Medical Corps will take over the military hospital in Moose Jaw with an increase of 150 beds. All medical men now holding commissions in the C.A.M.C. in Moose Jaw, and now on duty, remain on the staff. Only C.A.M.C. nurses will be employed.

IN Regina a new military hospital is to be erected providing 300 beds. The city is expected to provide the site.

ALBERTA

IN the new bill introduced by the Minister of Education and accepted by the legislature medical, inspection of schools has

been made compulsory. The Hospital Bill was reported for third reading. During the discussion authorizing steps for the formation of a hospital district, it was elicited that women as well as men, under certain definite conditions, were entitled to a vote. In the case of union hospitals supplying a district in Alberta and a contiguous one in Saskatchewan, a section was added authorizing the district in Alberta to raise the necessary money for the support of the hospital.

DR. MAHOOD is drafting a by-law for the approval of the city of Calgary which will provide for compulsory medical inspection of all persons engaged in the handling of food. This is intended to minimize the danger of contagion, especially in the cases of tuberculosis and venereal disease. Regarding the latter Dr. Mahood stated that between 400 and 500 cases were being treated in Calgary at the present time.

BRITISH COLUMBIA

THE monthly report of the Provincial Mental Hospital shows that at the beginning of February there were 1,320 patients, admitted. The Provincial Royal Jubilee Hospital has received a grant of \$8,000 from the city council, and an additional grant of \$1,000 a month, making a total of \$20,000 for the year.

The establishment of a home, of the farm colony type, for the feeble-minded is urged by Mrs. Manchester in her annual report to the Local Council of Women.

ARMY MEDICAL SERVICES

THE Distinguished Service Order has been conferred upon Captain Gordon William Armstrong, who saw service with the Royal Army Medical Corps in France and Mesopotamia. He was granted his distinction for working in the open under continuous heavy shell fire, and for handling two hundred stretcher cases in two hours at the first aid post. Later he went to the aid of an officer and an orderly, carrying them from the danger zone, and though wounded himself he refused to leave his post until properly relieved. Captain Armstrong is a B.A., Victoria '13, and an M.B. of the Toronto University.

THE Distinguished Service Order has been conferred upon

Major Kenneth McCormick, C.A.M.C., for remaining forty-eight hours at his post without rest, evacuating the wounded and searching shell holes until the last wounded man left.

The Military Cross has been awarded to Captain Dimrock Stanley Cassidy, R.A.M.C., of Winnipeg, Manitoba, formerly of the C.A.M.C. He went down in a mine shaft when a party of men were gassed and remained all night preparing and rendering first aid; nor did he leave his post even when seriously affected by gas.

TWENTY-NINE officers of the Canadian Army Medical Corps are gazetted to commissions in the Royal Army Medical Corps.

ALL hospitals now under the Military Hospitals Commission, except those treating cases of tuberculosis, insanity, epilepsy or incurable diseases, will be taken over by the Militia Department on April 1st. Lieutenant-Colonel C. L. McGuffin, assistant director of medical services in Military District No. 13, has returned from making arrangements to this effect at Ottawa.

MISS NETTIE BRIDGES, V.A.D., and Miss Marion Crocket, V.A.D., both of Nova Scotia, have received the Red Bar which denotes they have served with efficiency one year in Military nursing.

THE following members of the Canadian Army Medical Service Corps have been awarded the Military Medal.

Sergeants H. Morison and H. Wood; Corporals G. W. Waddington, R. G. Harding, A. K. Magner, B. M. Mitcheson and Lance-Corporal W. D. Watherston; and Privates J. Bell, A. W. Eaton, E. D. Emery, J. Erskine, H. D. Kitchen, A. L. Lansdowne, C. Pedlow, E. Badeau, H. V. Caton, J. Currie, D. P. Ewen, M. Hardy, R. M. Hill, and A. M. Stewart.

LIEUTENANT-COLONEL R. M. SIMPSON, of Winnipeg, assistant director of medicals, is gazetted colonel.

MAJOR J. W. COULTER, M.D., has been appointed to the responsible office of president to a travelling board in England.

CAPTAIN FREER RICHARDSON, lent by the C.M.S., of London,

England, to take charge of the army hospital stationed at Bagdad, has been transferred to Mesopotamia.

CAPTAIN D. M. WARREN, M.D., has resigned from the R.A. M.C., and been given a commission in the C.A.M.C., and appointed to the King's Canadian Red Cross Hospital at Bushy Park, Middlesex.

CAPTAIN H. J. WATSON, M.D., of Winnipeg, has resigned his commission as Captain in the C.A.M.C., and been appointed Major in the United States Medical Reserve Corps. He served with the C.A.M.C. from January, 1916, to November, 1917. He recently served on the staff of the director general of the Medical Services, Ottawa. Dr. Watson formerly served with the United States army in the Philippines. He is a graduate of Trinity, and also holds the degree of M.D. from the University of Manitoba.

SURGEON F. W. LEECH, a graduate of Medical Class '17 of the Toronto University, has been attached to the Royal Navy and listed for foreign service. In 1915 he went overseas and was attached to headquarters staff of the 4th Brigade. He returned to Canada to complete his course and went back to the front on graduation.

DR. J. A. HARVIE, Ontario, has three sons serving at the front, all of Toronto University, and two in the medical profession. Captain R. M. Harvie was formerly with the British unit at Salonika and is now on the medical board at Folkestone, while Horace H. Harvie is a surgeon at a casualty clearing station in France.

CAPTAIN D. G. MCKAY, who left in August, 1916, with the C.A.M.C., has returned to Canada. The doctor was nine months in the trenches and was then invalided to England after being gassed.

CAPTAIN CLEVELAND ROY WILSON is on his way to the front. The captain was formerly on the staff of the Hospital for Sick Children, Toronto, and was later on duty at Exhibition Camp; he afterwards went to Hamilton from whence he was one of seven doctors drafted to proceed overseas.

MAJOR J. CAMERON WILSON, Major G. C. Hale and Major J. G. Hunt are returning to Canada. Major Wilson left London, Ontario, on the declaration of war, with No. 16 Field Ambulance. Later he returned and went overseas with the Western University Hospital. Major Hale is a son of the late Mr. Jeffrey Hale. He went overseas as medical officer of the 18th Battalion; later he transferred to a hospital unit. Major Hunt has served with the Russian army in Russia and Roumania.

SURGEON-GENERAL R. H. FEATHERSTON, of the Anzacs, is visiting the military district of Ontario to tour the military hospitals in order to gain information as to the best method of handling the returned soldier problem in Australia.

CASUALTIES

Killed in Action

CAPTAIN ST. CLAIR DUNN (formerly of the Princess Patricias).

Wounded

J. C. WEATHERBY, Vancouver.
S. TOMER.

Canadian Literature

ORIGINAL CONTRIBUTIONS

The Public Health Journal, February, 1918:

The advisory committee on venereal
diseases for Military District No. 2

Major J. G. Fitzgerald.

Book Reviews

LORD LISTER. By **SIR RICKMAN JOHN GODLEE**, Bt., K.C.V.O., M.S., F.R.C.S. 663 pages. Price 18/- net. Publishers: The Macmillan Company, London, New York, and Toronto, 1917.

Sir Rickman Godlee's biography of Lord Lister is excellently done. As Lord Lister's nephew he has had access to all possible documents, and doubtless to personal information which any other biographer would have lacked. As his nephew, too, the work has undoubtedly also been a labour of love, so that we have before us one of the best of medical biographies. The perusal of the book has been extraordinarily interesting. As one turns the last page and thinks back upon the six hundred odd pages that have gone before, one realizes how very vivid Sir Rickman has made the picture of the great man's life; and the vividness of the impression is the measure of a good biography.

The picture shows us a man whose chief characteristics were intense earnestness in the pursuit of knowledge, great insight into the conditions of any given problem, extraordinary industry and patience in detail; and to crown the whole, that faith in his conclusions and tenacity of purpose in the face of most discouraging opposition without which the whole great idea of antisepsis might have suffered eclipse for many years. There are other aspects of the picture, hardly less interesting than that which concerns the great work with which his name is associated; aspects of the man in his personal relations to colleagues; with the sick poor; of his early Quaker training; of his married life, to name only a few. He was uniformly kind to the sick, patient though positive in debate, pertinacious in following high ideals both humanitarian and scientific. As to his literary style, he had a command of fine English, clear, if not concise. One other impression which the picture as a whole gives us is that he seems to have lacked entirely a sense of humour. Whether this was really the case or was the fault of his biographer, one cannot say. Are the Quakers devoid of humour? There were other small defects in his character. For instance, he appears to have always been late for his appointments, and when speaking in public he apparently lost track entirely of time. At one

meeting of the British Medical Association in an afternoon session where two hours were allotted for six papers, Lister came on first and took up the whole two hours with his own paper. What the feelings of the five other readers were history sayeth not. Perhaps such lapses can be pardoned to genius. And if genius consists in the capacity of taking infinite pains, then was Lister certainly a genius.

It would naturally be impossible to mention all the interesting things that are set down in this book. Let it suffice to recommend its perusal not only to the medical but also the lay reader. It is worth a good deal of time.

MODERN DENTISTRY. By JOSEPH HEAD, M.D., D.D.S. of Philadelphia. W. B. Saunders Co., Philadelphia and London.

The trend in medicine is to direct more and more attention to the great question of prevention of disease. It is only recently that the profession generally has realized the importance of mouth infection as a cause of disease elsewhere. As is the case with any advance, certain men have gone too far and expect too much. This should not be brought as a reproach against the necessity of recognizing the far reaching effects of mouth infection and the need of correction when such exists.

Many of the profession, both medical and dental, have not awakened to the importance of these recent developments. The medical profession can do much by supporting the dentist who is awake to the newer methods of diagnosis and treatment and has the ability to carry them out. It is altogether likely that in the dental profession, at any rate in the larger centres, certain men will devote themselves particularly to the treatment of mouth infection, but there is no reason why dentists everywhere should not be familiar with the subject. This work of Dr. Head's represents a study of modern methods in dentistry with particular attention given to the subject of mouth infection. The parts of it that deal with dental procedures are perhaps not of special importance to us medically, but even here the physician will find much that is of interest.

Dr. Head deals at length with the methods of prevention of mouth infection and lays particular stress on it. It is a question how many people know how to keep their mouths in proper condition. Investigate carefully the condition of the mouth in the next fifty patients you see, whatever walk in life they come from, and you will conclude that but a small proportion attend to

it efficiently. The proper method of cleaning the teeth is described in detail. One point deserves to be emphasized; that it should be possible to brush the teeth with as much force as one brushes the finger nails. How many people can do this without discomfort? A proper method renders this perfectly possible.

Of particular importance are the chapters dealing with the subject of mouth infection. Too often we fail to look for it or may not know how to recognize it when present. Dr. Head devotes a chapter to the discussion of the use of vaccines in the treatment of mouth infections. Naturally there is a great deal of difference of opinion as to their value. Dr. Head emphasizes the need of small doses being given at first and that any increase should be very carefully made. While the removal of the focus of infection is sufficient in many cases yet in others a subsequent course of treatment by vaccines is undoubtedly of value. In the cases of anæmia due to mouth infection the use of vaccines seems undoubtedly useful. The section on the care of the teeth in childhood should be useful to many practitioners.

In the recognition of mouth infection, a great deal depends on the proper use of the *x*-rays and the book concludes with a chapter concerning this, illustrated by a number of interesting plates. Both professions need to learn the lesson, and especially the dentist, that a tooth may not give any pain or show any external signs of disease, and yet have an abscess at the apex. For the recognition of these the *x*-rays are necessary. There is no excuse for an attitude of hostility between the two professions and with proper methods and careful study it should be possible to determine when teeth should be removed. To remove teeth recklessly and on chance is almost criminal; to keep a focus of infection is perhaps worse.

Altogether this book may be highly commended to the members of the medical profession as dealing with a "border line subject" in which both physician and dentist should be equally interested and in which team play is very essential for the best welfare of the patient.

DISEASES OF WOMEN. By HARRY STURGEON CROSSEN, M.D., F.A.C.S., associate in gynæcology, Washington University Medical School. Fourth edition, revised and enlarged, 1125 pages with 800 engravings. Price \$7.50. Publishers: C. V. Mosby Company, St. Louis, 1917.

This splendid work has now reached its fourth edition, and

has been thoroughly revised, and brought up to date by the author. The fact that the work has run through these additions in such a short time is proof of its many good quantities, especially in these days when there are so many excellent books on this subject available for the purchaser. This work is got up in most attractive form. The binding, paper, illustrations, and typography are such as appeal to the reader and add much to the pleasure of reading this volume. We wish to express our full measure of praise to both author and publishers, and also to commend the work to our readers.

HAND BOOK OF GYNÆCOLOGY FOR STUDENTS AND PRACTITIONERS.

By HENRY FOSTER LEWIS, A.B., M.D., professor and head of department of obstetrics and gynæcology in Loyola University School of Medicine, and ALFRED DE ROULET, B.Sc., M.S., M.D., professor of gynæcology in Loyola University School of Medicine. With one hundred and seventy-seven illustrations. C. V. Mosby Company, St. Louis, 1917.

This volume of 450 pages covers the essentials of gynæcology in a careful and scholarly manner. The text matter is very well arranged, and thereby more convenient for the reader. The book will prove a very useful guide for such as may consult its pages. It is beautifully illustrated, printed and bound; and is well worthy of cordial recommendation to the profession.

THE PRACTICAL MEDICINE SERIES; comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the editorial charge of CHARLES L. MIX, A.M., M.D., professor of physical diagnosis in the Northwestern University Medical School. Vol. I, GENERAL MEDICINE. Edited by FRANK BILLINGS, M.S., M.D., head of the medical department, and dean of the Faculty of Rush Medical College, Chicago. Series 1917. The Year Book Publishers, 608 S. Dearborn Street, Chicago.

This volume covers the ground of general medicine. There is a section on research work, one on infectious diseases, one on diseases of the chest, one on the heart, one on the blood, one on the ductless glands, one on metabolism, and one on the kidneys. These topics are well written up. The author has a clear style and can tell in a reasonable space the essentials regarding the subject of discussion. This should prove a very attractive and useful series. The volumes are small and can be read with pleasure, or taken with one if going on a trip anywhere.

Books Received

THE following books have been received and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.

MEDICAL ELECTRICITY. A Practical Handbook for Students and Practitioners. By H. LEWIS JONES, M.A., M.D., F.R.C.P., late consulting medical officer to the electrical department in St. Bartholomew's Hospital. Seventh edition. Revised and edited by LULLUM WOOD BATHURST, M.D., physician in charge of electrotherapeutic department, Royal Free Hospital, London. 561 pages with illustrations. Price 15/- net. Publishers: H. K. Lewis & Co., 136 Gower Street, London W.C. 1, 1918.

TUMOURS, THEIR NATURE AND CAUSATION. By W. D'ESTE EMERY, M.D., B.Sc., director of the laboratories, King's College Hospital. Price 5/- net. Publishers: H. K. Lewis & Co., 136 Gower Street, London W.C. 1, 1918.

THE SYSTEMATIC TREATMENT OF GONORRHOEA. By N. P. L. LUMB, temporary Captain, R.A.M.C., 116 pages. Price 4/6 net. Publishers: H. K. Lewis & Co., 136 Gower Street, London W.C. 1, 1918.

THE NAUHEIM TREATMENT, IN ENGLAND, OF DISEASES OF THE HEART AND CIRCULATION. By LESLIE THORNE THORNE, M.D., B.S., M.R.C.S., L.R.C.P., late medical officer London County Council Technical Educational Board. Fifth edition, 160 pages. Price 5/- net. Publishers: Baillière, Tindall & Cox, 8 Henrietta Street, Covent Garden, London, 1918.

AIDS TO RATIONAL THERAPEUTICS; with U.S.A. Pharmacopœia, Equivalents. By RALPH WINNINGTON LEFTWICH, M.D. C.M., M.R.C.S., late assistant physician to the East London Children's Hospital. 228 pages. Publishers: Baillière, Tindall & Cox, 8 Henrietta Street, Covent Garden, London, 1918.

MANUAL OF VITAL FUNCTION TESTING METHODS AND THEIR INTERPRETATION. By WILFRED M. BARTON, M.D., associate professor of medicine, Georgetown University. 311 pages. Price \$2.00 net. Publishers: Boston, R. C. Badger, The Gorham Press; Toronto: The Copp Clark Co., 1917.

CANADIAN MEDICAL DIRECTORY. Containing the law of the reciprocity of license between the United Kingdom and the Britannic Dominion; the law and regulations of the Medical Council of Canada with the list of the licentiates; the medical societies, hospitals, etc., of each province; the laws and regulations for the practice of medicine, surgery and midwifery in the different provinces. With complete alphabetical index of physicians of the Dominion. First edition. Price \$3.00. Edited by N. W. MOORE, M.D., 6456 St. Mary Street, Montreal, 1918.

THE SPLEEN AND ANÆMIA: EXPERIMENTAL AND CLINICAL STUDIES. By RICHARD MILLS PEARCE, M.D., Sc.D., professor of research medicine; and others. 500 pages with 16 illustrations. Price \$5.00. Publishers: J. B. Lippincott Company, Philadelphia, London, and 201 Unity Building, Montreal, 1918.

TRANSACTIONS OF THE AMERICAN UROLOGICAL ASSOCIATION. Sixteenth Annual Meeting at Chicago, April 2nd, 3rd, 4th, 1917. Vol. XI. Published by RICHARD FOTHERINGHAM O'NEILL; and others. Printed for the Association at the Riverdale Press, Brookline, Mass., 1918.

INTERNATIONAL CLINICS. Edited by H. R. LANDIS, with the collaboration of Chas. H. Mayo; and others. Volume I. Twenty-eighth series, 1918. Price \$2.50. Publishers: J. B. Lippincott Company, Philadelphia, London, and 201 Unity Building, Montreal, 1918.

Medical Societies

MONTREAL MEDICO-CHIRURGICAL SOCIETY

THE sixth regular meeting of the society was held Friday, December 21st, 1917, Dr. A. E. Garrow, president, in the chair.

LIVING CASE: "Round celled sarcoma," Dr. A. E. Garrow.

The patient is thirty-one years of age and on August 20th, while working on his farm and carrying a pitchfork over his shoulder for some time, he noticed a lump developing on the outer aspect of his clavicle. He then came to the hospital with a mushroom-like swelling occupying the upper third of the clavicle, tender to pressure but not limiting the movements of the shoulder to any extent. A small portion was removed for examination and a small celled sarcoma was discovered. Two days later we did a block dissection, involving the outer half of the clavicle and the whole of the growth right up to the head of the humerus and all the soft tissues around it, removing the clavicle and disarticulating it from the acromium process. The patient remained well for some time, and in spite of the loss of parts, fair movement was maintained. Four or five months later he again returned with a rapidly developing mass running up along the anterior portion of the trapezius muscle. Induration also felt in the posterior triangle. This was on January 10th and we made another block dissection of all the structures of the posterior triangle including one half of the trapezius muscle, dissecting it away from the spine of the scapula and removing everything along the internal jugular vein right up to the base of the skull. Immediately after that, and since then, he has been getting x-ray treatment and up to the present moment there is not the slightest evidence of any induration or recurrence and in spite of the maiming operation this patient is able to do practically everything with his hand as before. Dr. Oertel reported it a very rapidly growing round celled sarcoma, periosteal in type.

PATHOLOGICAL SPECIMENS: Dr. C. T. Crowdy exhibited a series of specimens in the absence of Dr. H. Oertel.

1. The first case illustrates a rather interesting combination of two well-known pathological lesions, tuberculosis and carcinoma. This is relatively rare and is the first case we have seen in our department since Dr. Oertel's appointment three years ago. The

patient was a man aged sixty-one, a harnessmaker, Canadian, admitted to Dr. Garrow's service with the complaint of "soreness in the mouth." About four months before admission he noticed a small lump on his tongue. He consulted a physician and was given a mouth wash, which he used thoroughly, but the lump grew bigger and pain gradually increased and became severe. Finally he was unable to swallow any solid food, subsisting on liquids only. When he came to the hospital he had an extensive growth involving the tongue, the floor of the mouth, the lower jaw and apparently also the lower lip. An operation was performed and the greater part of the tongue, lower jaw, floor of the mouth, lower lip and also the regional glands in the neck excised. When the specimens were sectioned and examined histologically the tongue showed a typical squamous celled carcinoma and the lip well formed tubercles with typical giant cells, etc., but no evidence of new growth. In one of the regional glands, however, tuberculosis and carcinoma were found to exist side by side, and this I hope to be able to demonstrate with the lantern.

In, 1911 Dr. Oertel reported in the *Journal of Medical Research* a case presenting this combination and also reviewed the literature up to that time. His case was that of a scirrhus carcinoma of the stomach with metastases in the lung, and at autopsy an active tuberculosis of the lung which was invading and destroying the carcinomatous growth was demonstrated. In his review he draws attention to the importance of these lesions and points out the doubtful value of enlarged regional glands in the diagnosis of malignancy, particularly when the glands of the neck are involved. In his summary Dr. Oertel classifies the reported cases under three heads: (1) The cancer may dominate, infiltrate the tuberculous granulation tissues and prevent a successful invasion of the tuberculous infection. (2) The tuberculous inflammation overgrows and destroys the cancer. (3) There exists a close association of the two diseases, "symbiosis", without any applicable destructive influence of one upon the other. To this class our case probably belongs.

The patient eventually died and came to autopsy and the lungs showed a well marked and rather advanced ulcerative tuberculosis.

2. Two cases of tuberculosis of the intestine. The first of these was admitted to Dr. Chipman's service. A female between fifty and fifty-five, whose only complaint was slight colicky pains which had occurred off and on since last April, though lately she noticed a small mass in the right lower quadrant. She saw a physi-

cian and after some unsuccessful treatment was finally sent to the hospital. On physical examination the mass was easily palpable and the colicky pains were practically the only symptom. She was given castor oil and the bowels moved freely. A tentative diagnosis of new growth of the ovary or cæcum was made. A laparotomy was performed and a large mass found involving the cæcum. An entero-enterostomy was done and a small mesenteric gland removed for examination. Both inflammatory condition and new growth were discussed at the time of operation and the latter was rather favoured, but examination of the gland disclosed tuberculosis. This of course favoured but did not prove a granulomatous condition (see above, 1). At a second operation the cæcum was resected and the opinion was then expressed that the lesion was inflammatory and probably tuberculous. This was largely based on the fact that the mucous membrane was intact, while the submucous coats and the musculature were much thickened, firm and leathery. In carcinomata the mucous membrane is involved with the other coats. This diagnosis proved to be correct as the sections showed characteristic tuberculous granulomatous tissue. The specimen does not show grossly ulceration or tubercle formation but resembles rather closely the condition known as leather-bottle stomach, of which condition five cases were reported by Dr. Armstrong in the "Royal Victoria Hospital Scientific Reports", Series B, No. 1, 1916, under the heading of "Gastritis granulomatosa fibroplastica".

The second specimen of tuberculosis of the intestine is from Dr. Garrow's service. The patient, a Russian pedlar, was admitted complaining of "pain in the abdomen, especially after eating". About four months before admission he had severe cramp-like pains referred to the umbilicus. They occurred eight to ten times in an hour and lasted only about a minute. Once or twice a week he would vomit immediately after eating; this was accompanied by cramp-like pains. He was very constipated, had a cough and once or twice a week had night sweats. Three weeks ago he was seized by a sudden sharp pain which caused him to double up and cry out. During the three weeks he had several of these attacks and finally came to the outdoor of the hospital and was sent into the ward. He then said that he had lost twenty pounds in the past year, had become much weaker during the last three weeks and night sweats had been more frequent. The x-ray report indicated distension but no obstruction.

The specimen itself shows a typical tuberculous lesion with

ulceration, fibrous thickening and well marked tubercles, and is interesting on account of its location. As you see it involves more particularly the ileum and only an inch or so of the cæcum. The wall of the distal six inches of the ileum is approximately 1 cm. thick, the lumen relatively large and the mucous membrane necrotic and irregular. This inflammatory thickening extends into the proximal of the cæcum and involves the appendix. The ileum above the thickened part is dilated, the wall thinned and the mucous membrane shows at intervals ulcers which apparently involve Peyer's patches and tend to spread transversely. The serous coat throughout is studded with miliary tubercles.

3. I have here also the organs of the case which Dr. Garrow is presenting to-night. They are from an infant six days old who died following an operation to relieve obstruction. Laparotomy disclosed evidence of perforation and a colostomy was performed. At autopsy a perforation about the size of a five-cent piece was found in the ascending colon near the hepatic flexure. Nothing could be found grossly to indicate the nature of the lesion and microscopic examination does not throw any further light on its etiology.

Dr. Crowdy exhibited slides from all these organs.

CASE REPORT: "Perforation in the large gut in a child of five days," by Dr. A. E. Garrow:

As to the clinical history of the case from which the specimen described by Dr. Crowdy was obtained, it was born last Monday at five o'clock, brought into hospital on Thursday, a period of about sixty-eight hours from birth, with a history that the child had not passed any meconium. As we saw it, it was a rather small, poorly nourished, thin child, with markedly distended abdomen, and crying out every three or four minutes with colicky pain, dropping off to sleep, then crying again; this had been going on ever since it was born. Imperforate anus was suspected but examination showed it to be perforate, with a well developed rectum. I was at loss to decide what the condition was but the indications for immediate relief were great, so the abdomen was opened under a little chloroform anæsthesia and we got a distended small bowel packed with pasty-like meconium, and on opening the peritoneal cavity we got thin, greenish fluid with a few flakes of lymph and bubbles of air. We simply took the largest and most distended knuckle of bowel and drew it out and the specimen will show that this was within four inches of the perforation, but we did not recognize it or think of this as a cause. The child lived forty-eight hours after the operation.

With respect to my other case of intestinal tuberculosis the

prominent feature in this man's condition was the colicky pain of an obstructive character and a history of persistent constipation for several months. This man was a lunger and had been advised at the outdoor department of the hospital to go to the mountains, but he absolutely refused unless he had some relief from his abdominal distress. The disease extended a long way up the ileum and the ulceration involved the Peyer's patches and the solitary follicles also.

PAPER: The paper of the evening was read by Dr. L. M. Lindsay on "Influenzal meningitis," with report of case, and was discussed by Dr. H. B. Cushing.

CASE REPORT: Two cases of "Trichinosis from the ingestion of bear meat," by Captain R. O. Ross, M.D., of Stanstead, Que.

DISCUSSION: Dr. W. S. Morrow: I would like to ask Dr. Ross what happens in the case of cure in these cases, whether the trichinae die, become encysted, or what happens to them, and whether cure is apt to be permanent or not.

Dr. H. B. Cushing: I was interested to hear of these cases because it is rather a coincidence that the first case of trichinosis I saw was in a man living out near Stanstead and the history was that while at a lumber camp he had eaten freely of pork and beans. It is obvious that the bear must have been infected by eating trichinous meat. One interesting point in the case was the occurrence of conjunctivitis. It is usually a marked early symptom in these cases. A number of cases reported in New York were admitted to the eye wards for this condition and the true diagnosis made afterwards. The man I spoke of recovered after some months and has been well since.

Captain R. O. Ross: My belief is that when the human being recovers from trichinosis that the trichinae do become encysted just as they do in the muscle of the hog. Of course it would be interesting to find out what happens later on. In the case where a portion of the muscle was examined the trichinae were lying free in many cases in the interspaces between, in other cases they were in the muscular fibres and can very easily be seen by teasing the fibres out. They were coiled and showed very prettily in this form. Where they were between the muscle fibres they were almost straight or could be straightened out. I had heard of the patient mentioned by Dr. Cushing, it having been reported to me after my own cases had been diagnosed. I was also told that for his own satisfaction this man had had one of his muscles incised and a piece examined for the trichinae, which were readily found.

Medical Societies

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ALBERTA MEDICAL ASSOCIATION:—President—Dr. D. G. Revell, University of Alberta, Edmonton South. Secretary-treasurer—Dr. T. H. Whitelaw, Medical Officer of Health, Edmonton.

Annual Meeting, Edmonton, 1918.

ASSOCIATION OF MEDICAL OFFICERS OF THE MILITIA:—President—Lt.-Colonel A. T. Shillington, A.M.C., Ottawa. Secretary—Captain T. H. Leggett, A.M.C., Ottawa.

ASSOCIATION OF MEDICAL OFFICERS OF NOVA SCOTIA:—President—Dr. George E. DeWitt, Wolfville. Secretary—Dr. W. W. Hattie, Halifax.

BRANT COUNTY MEDICAL SOCIETY:—President—Dr. E. R. Secord, Brantford. Secretary—Dr. M. N. Faris.

BRITISH COLUMBIA MEDICAL ASSOCIATION:—President—Dr. J. Glen Campbell, Vancouver. Secretary—Dr. H. W. Riggs, Vancouver.

CALGARY MEDICAL ASSOCIATION:—President—Dr. H. A. Gibson. Secretary—Dr. J. W. Richardson. Treasurer—Dr. J. V. Follett.

CANADIAN ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS:—President—Dr. J. A. Machado, Ottawa. Secretary—Dr. George D. Porter, Ottawa.

CANADIAN HOSPITAL ASSOCIATION:—President—Dr. H. A. Boyce, Belleville. Secretary—Dr. J. M. E. Brown, Toronto.

CANADIAN PUBLIC HEALTH ASSOCIATION:—President—Dr. J. W. Hattie, Halifax, Nova Scotia. Secretary—Dr. J. G. Fitzgerald, University of Toronto. Annual Meeting, Hamilton, May, 1918.

CENTRAL SOUTHERN ALBERTA MEDICAL SOCIETY:—President—Dr. J. S. Murray, Okotoks. Secretary-treasurer—Dr. G. E. Learmonth, High River.

COLCHESTER-HANTS MEDICAL SOCIETY:—President—Dr. J. W. T. Patton, Truro. Secretary—Dr. H. V. Kent, Truro.

DUFFERIN MEDICAL SOCIETY:—President—Dr. Rooney, Orangeville. Secretary—Dr. Smith, Shelburne.

EDMONTON ACADEMY OF MEDICINE:—President—Dr. C. U. Holmes. Secretary-treasurer—Dr. E. L. Garner. Library, 12 Credit Foncier Building.

ELGIN COUNTY MEDICAL ASSOCIATION:—President—Dr. F. F. McEwen, Aylmer. Secretary-treasurer—Dr. W. F. Cornett, St. Thomas.

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